

SEQUENCE LISTING

<110> JOHNSTON, STEPHEN A.
STEMKE-HALE, KATHERINE
SYKES, KATHRYN F.
KALTENBOECK, BERNHARD

<120> METHODS AND compositions for Vaccination COMPRISING NUCLEIC ACID
AND/OR POLYPEPTIDE SEQUENCES OF *CHLAMYDIA*

<130> UTSD:736US

<140> UNKNOWN

<141> 2001-12-17

<150> 60/225,839

<151> 2000-12-15

<160> 69

<170> PatentIn Ver. 2.1

<210> 1

<211> 127

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 1

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gtgaccc 127

<210> 2

<211> 15

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
Primer

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15

<210> 3

<211> 11

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

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11

<210> 4

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
Primer

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19

<210> 5

<211> 17

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
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17

<210> 6

<211> 449

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
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ctaaacaaaag atcagggaaa ttctcctcta tcggccatcg ccatgcacta ttccagtga 180
tggtttattag aaatcattga tttccttggg gaagcggcca aacatctaca acaaactatt 240
tttgaaaaaa catttttaga aacagtcatc atccatctta ttcggatatg ccaacgtccc 300
tcttttagaaa ctctgttttc tcaactgaaa acatccacgt ttgatacagt gagaaacgta 360
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agttttcttaa cttcaccttc tcccacgcc 449

<210> 7

<211> 149

<212> PRT

<213> Chlamydia psittaci

<400> 7

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Thr Ala Ile Asn Ser Gly Val Ala Pro Ile Thr Phe Leu His Asp Leu
20 25 30

Thr Val Phe Tyr Arg Asp Val Leu Leu Asn Lys Asp Gln Gly Asn Ser
35 40 45

Pro Leu Ser Ala Ile Ala Met His Tyr Ser Ser Glu Cys Leu Leu Glu
50 55 60

Ile Ile Asp Phe Leu Gly Glu Ala Ala Lys His Leu Gln Gln Thr Ile
65 70 75 80

Phe Glu Lys Thr Phe Leu Glu Thr Val Ile Ile His Leu Ile Arg Ile
85 90 95

Cys Gln Arg Pro Ser Leu Glu Thr Leu Phe Ser Gln Leu Lys Thr Ser
100 105 110

Thr Phe Asp Thr Val Arg Asn Val Pro Gln Gln Gln Glu Pro Ser Lys
115 120 125

Pro Ser Ile Gln Pro Glu Lys His Tyr Gln Asp Gln Ser Phe Leu Thr
130 135 140

Ser Pro Ser Pro Thr
145

<210> 8

<211> 1332

<212> DNA

<213> Chlamydia psittaci

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gcgcatgcgt atttattttc agggattcgc ggaacaggaa aaacaacttt agcaagaatc 180
tttgcaaaag ccttaaaactg taaagagctg actcctgaac atgaaccatg caaccagtgt 240
tgtgtttgta aagaaatctc ttcaggaacc tccttagacg tgatcgaaat cgatggtgcc 300
tcgcaccgag gtattgaaga tatccgtcaa atcaatgaaa ccgtgctctt tactcctgcc 360
aatcacaaat ataaaatcta tatcatagat gaagtccata tgctgactaa ggaggcgttt 420
aattccttac tcaaaacttt agaagagcct ccgagccatg taaaattctt cttagcgact 480
acagaaaatt ataaaatacc cagcaccatt ttaagtcgtt gtcaaaaaat gcacctaaag 540
agaattcctg agacaatgat tgtagataag ctagcatcca tatctcaagc aggtgggata 600
gaaacctctc gagaagctct tcttcctatt gctagagcag cacagggag cttacgcgat 660
gctgaatctc tttatgatta tgtcataggg ttattcccta catctttatc cccagagttg 720
gttgcgagacg cattaggttt attatctcaa gacaccttag ctacattatc agaattgatt 780

cgcacgcaaa aatacgtga agctttgctt cctgtcacga cagcgatcaa ttctggagtc 840
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 acttcacctt ctcccacgcc aaaagttcag catcaaaaag aagcttcccc ttcttttagtg 1260
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 accaaggagt aa 1332

<210> 9

<211> 443

<212> PRT

<213> Chlamydia psittaci

<400> 9

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			20					25					30		
Asn	Ala	Leu	Gln	Phe	Gln	Arg	Val	Ala	His	Ala	Tyr	Leu	Phe	Ser	Gly
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Ile	Arg	Gly	Thr	Gly	Lys	Thr	Thr	Leu	Ala	Arg	Ile	Phe	Ala	Lys	Ala
	50					55					60				
Leu	Asn	Cys	Lys	Glu	Leu	Thr	Pro	Glu	His	Glu	Pro	Cys	Asn	Gln	Cys
65					70					75				80	
Cys	Val	Cys	Lys	Glu	Ile	Ser	Ser	Gly	Thr	Ser	Leu	Asp	Val	Ile	Glu
			85						90					95	
Ile	Asp	Gly	Ala	Ser	His	Arg	Gly	Ile	Glu	Asp	Ile	Arg	Gln	Ile	Asn
		100					105						110		
Glu	Thr	Val	Leu	Phe	Thr	Pro	Ala	Lys	Ser	Gln	Tyr	Lys	Ile	Tyr	Ile
		115					120						125		
Ile	Asp	Glu	Val	His	Met	Leu	Thr	Lys	Glu	Ala	Phe	Asn	Ser	Leu	Leu
		130				135					140				
Lys	Thr	Leu	Glu	Glu	Pro	Pro	Ser	His	Val	Lys	Phe	Phe	Leu	Ala	Thr
145					150					155				160	
Thr	Glu	Asn	Tyr	Lys	Ile	Pro	Ser	Thr	Ile	Leu	Ser	Arg	Cys	Gln	Lys
			165					170						175	
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25103618.1

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gaa 123

<210> 11
<211> 41
<212> PRT
<213> Chlamydia psittaci

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Met Ala Ala Ser Ile Ala Met Asp Val Thr Asp Val Val Ile Glu Val
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Gly Leu Ser His Val Ile Ser Pro Glu
35 40

<210> 12
<211> 303
<212> DNA
<213> Chlamydia psittaci

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gaattaagcg aagagtttat tcaagagtat gaaagttctt taaatgaagt cattaaaaact 120
atggcagcat ccatcgctat ggatgtaacc gacgtgggta ttgagggttg tttatcccat 180
gtgatcagtc ccgaagattt acgagaagat atcggtgcct caagtttctc tcgtgaggag 240
tttctaacta atgtccctga atccttaggg ggattagtaa aagtaccac agtcattaag 300
tag 303

<210> 13
<211> 100
<212> PRT
<213> Chlamydia psittaci

<400> 13
Met Thr Gln Pro Tyr Val Thr Arg Glu Asp Ile Ile Leu Leu Ala Lys
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Ser Ser Ala Leu Glu Leu Ser Glu Glu Phe Ile Gln Glu Tyr Glu Ser
20 25 30
Ser Leu Asn Glu Val Ile Lys Thr Met Ala Ala Ser Ile Ala Met Asp
35 40 45
Val Thr Asp Val Val Ile Glu Val Gly Leu Ser His Val Ile Ser Pro
50 55 60

Glu Asp Leu Arg Glu Asp Ile Val Ala Ser Ser Phe Ser Arg Glu Glu
65 70 75 80

Phe Leu Thr Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys Val Pro
85 90 95

Thr Val Ile Lys
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<210> 14
<211> 514
<212> DNA
<213> Chlamydia psittaci

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tacctcccag ctatcgccgt tccttcaggg tttctcgag aagggtgcc tctaggattc 180
caggtgattg gacaaaaggg taaagatcaa caggtgtgcc aggtaggcta tagcttccaa 240
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tagaattaaa cacaaaatct aaattgttca gttgtgcacg caaccgtttt ggagacgaac 420
ctaatacaaa catctctcct gtatgcaccg gcatgccggg gtcactgcca gtactgaata 480
aagaagcagt gagaaaggct gttttatttg gttg 514

<210> 15
<211> 102
<212> PRT
<213> Chlamydia psittaci

<400> 15
Glu Lys Cys Asp Val Ile Ala Met Pro Val Cys Ser Cys Pro Ala Phe
1 5 10 15

Ala Asp Gly Glu Ile Leu Asp Pro Thr Ser Leu Tyr Leu Gln Asp Ile
20 25 30

Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro Ala Ile Ala Val Pro
35 40 45

Ser Gly Phe Ser Arg Glu Gly Leu Pro Leu Gly Phe Gln Val Ile Gly
50 55 60

Gln Lys Gly Lys Asp Gln Val Cys Gln Val Gly Tyr Ser Phe Gln
65 70 75 80

Glu His Ser Gly Ile Lys Asn Leu Tyr Pro Lys Gly Cys Asn Lys Leu
85 90 95

Val Asp Gly Glu Val Lys
100

<210> 16
 <211> 1476
 <212> DNA
 <213> Chlamydia psittaci

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 gcgcgaggag aacctttggg gaaactcgca ggtgtcccca tcgggataaa agataaatatt 240
 catattcggg gtttgcgcac cacttggtgct tctaaaatgt tagaaaatta tatagcgcct 300
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 aatatggatg agtttgctat gggatcgaca acgcagtatt ctgctttcca tcctacgaaa 420
 aatccttggg gtttatcctg tgtgccagga ggatcttcag ggggatccgc cgccgcagtt 480
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 gtcgccttag ctatggatgt attcgcaggt aaggatgata gagatgcaac ttctcagaag 720
 ttttttacag gatctttcca agaggccttg tctttagacg ttccgagttt gatcggcgtg 780
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<210> 17
 <211> 491
 <212> PRT
 <213> Chlamydia psittaci

<400> 17
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 20 25 30
 Thr Glu Asp Asn Gln Ile Gly Ala Phe Leu Ser Leu Cys Glu Glu Arg
 35 40 45
 Ala Tyr Glu Lys Ala Ala Ile Ile Asp Ala Lys Val Ala Arg Gly Glu
 50 55 60
 Pro Leu Gly Lys Leu Ala Gly Val Pro Ile Gly Ile Lys Asp Asn Ile
 65 70 75 80

His	Ile	Arg	Gly	Leu	Arg	Thr	Thr	Cys	Ala	Ser	Lys	Met	Leu	Glu	Asn		
				85					90					95			
Tyr	Ile	Ala	Pro	Phe	Asp	Ala	Thr	Val	Val	Glu	Arg	Ile	Glu	Ala	Glu		
			100					105					110				
Asp	Gly	Val	Ile	Leu	Gly	Lys	Leu	Asn	Met	Asp	Glu	Phe	Ala	Met	Gly		
		115					120					125					
Ser	Thr	Thr	Gln	Tyr	Ser	Ala	Phe	His	Pro	Thr	Lys	Asn	Pro	Trp	Gly		
	130					135					140						
Leu	Ser	Cys	Val	Pro	Gly	Gly	Ser	Ser	Gly	Gly	Ser	Ala	Ala	Ala	Val		
145					150				155						160		
Ser	Ala	Arg	Phe	Cys	Pro	Ile	Ala	Leu	Gly	Ser	Asp	Thr	Gly	Gly	Ser		
				165					170					175			
Ile	Arg	Gln	Pro	Ala	Ala	Phe	Cys	Gly	Val	Val	Gly	Phe	Lys	Pro	Ser		
			180					185					190				
Tyr	Gly	Ala	Val	Ser	Arg	Tyr	Gly	Leu	Val	Ala	Phe	Gly	Ser	Ser	Leu		
	195						200					205					
Asp	Gln	Ile	Gly	Pro	Leu	Thr	Thr	Val	Val	Glu	Asp	Val	Ala	Leu	Ala		
	210					215					220						
Met	Asp	Val	Phe	Ala	Gly	Lys	Asp	Asp	Arg	Asp	Ala	Thr	Ser	Gln	Lys		
225					230					235					240		
Phe	Phe	Thr	Gly	Ser	Phe	Gln	Glu	Ala	Leu	Ser	Leu	Asp	Val	Pro	Ser		
				245					250					255			
Leu	Ile	Gly	Val	Pro	Met	Gly	Phe	Leu	Asp	Gly	Leu	Arg	Asp	Asp	Val		
		260						265					270				
Lys	Glu	Asn	Phe	Phe	Ala	Ser	Leu	Ser	Ile	Leu	Glu	Arg	Gln	Gly	Ser		
	275						280					285					
Arg	Ile	Val	Glu	Val	Asp	Leu	Asn	Ile	Leu	Asp	His	Ala	Val	Ser	Val		
	290					295					300						
Tyr	Tyr	Ile	Val	Ala	Ser	Ala	Glu	Ala	Ala	Thr	Asn	Leu	Ala	Arg	Phe		
305					310					315					320		
Asp	Gly	Ile	Arg	Tyr	Gly	Tyr	Arg	Ser	Pro	Glu	Ala	His	Ser	Ile	Glu		
				325					330					335			
Asp	Ile	Tyr	Thr	Ile	Ser	Arg	Val	Gln	Gly	Phe	Gly	Lys	Glu	Val	Met		
		340						345					350				
Arg	Arg	Ile	Leu	Leu	Gly	Asn	Tyr	Val	Leu	Ser	Thr	Glu	Arg	Gln	Asn		
		355					360					365					

Val Tyr Tyr Lys Lys Gly Ser Ala Ile Arg Ala Lys Ile Ile Gln Ala
370 375 380

Phe Gln Lys Ala Tyr Glu Lys Cys Asp Val Ile Ala Met Pro Val Cys
385 390 395 400

Ser Cys Pro Ala Phe Ala Asp Gly Glu Ile Leu Asp Pro Thr Ser Leu
405 410 415

Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro
420 425 430

Ala Ile Ala Val Pro Ser Gly Phe Ser Arg Glu Gly Leu Pro Leu Gly
435 440 445

Phe Gln Val Ile Gly Gln Lys Gly Lys Asp Gln Gln Val Cys Gln Val
450 455 460

Gly Tyr Ser Phe Gln Glu His Ser Gly Ile Lys Asn Leu Tyr Pro Lys
465 470 475 480

Gly Cys Asn Lys Leu Val Asp Gly Glu Val Lys
485 490

<210> 18

<211> 1464

<212> DNA

<213> Chlamydia psittaci

<400> 18

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aacatctctc	ctgtatgcac	cggcatgccg	gggtcactgc	cagtactgaa	taaagaagca	180
gtgagaaagg	ctgtttttatt	tggttgtgct	gttgaaggcg	aagtagcttt	gctcagccgt	240
tttgatagaa	agtcctattt	ttatcccgat	agcccaagga	attttcaa	tacccaattc	300
gaacatccta	ttgtgcgagg	aggacatata	aaagctatcg	ttcacggtga	ggaacgtcat	360
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tgcattgttt	gtgctgatga	tgctgttgct	tatgccacag	ctttggtatc	cttattagac	540
tacataggca	tttctgactg	taatatggaa	gaaggctcgg	tacgctttga	tgtaaacata	600
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ttcatagagc	ctgatctccc	agtattgcaa	ttaacagaag	catatattga	tgaaattcgt	900
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gccgaagaca	tcgctgccat	tttaattagc	gataagcata	gtgcgcactt	ctttgaatta	1020
gccgctcagg	aatgtaaaaa	ctacagagcc	ctttctaatt	ggttaactgt	tgagtttgcc	1080
ggacgtttga	aactcaaggg	taagaatctc	gctttctcag	gtatcctgcc	cagtagtgta	1140
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gcagacatga	tgatggaatc	tcctgaaaag	agtcctgaga	ctatcctcaa	agaaaatcct	1260
gaaatgttgc	ccatgacaga	tgaaagtgcg	ttggtggcga	tcatttccga	ggtgattacc	1320

gcaaatccgc agtctgtcgt agactacaaa agtggtaaga ccaaggcggtt aggattttta 1380
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 ttgcttgtgg aattaagtaa ataa 1464

<210> 19
 <211> 487
 <212> PRT
 <213> Chlamydia psittaci

<400> 19
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 20 25 30
 Arg Phe Gly Asp Glu Pro Asn Thr Asn Ile Ser Pro Val Cys Thr Gly
 35 40 45
 Met Pro Gly Ser Leu Pro Val Leu Asn Lys Glu Ala Val Arg Lys Ala
 50 55 60
 Val Leu Phe Gly Cys Ala Val Glu Gly Glu Val Ala Leu Leu Ser Arg
 65 70 75 80
 Phe Asp Arg Lys Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln
 85 90 95
 Ile Thr Gln Phe Glu His Pro Ile Val Arg Gly Gly His Ile Lys Ala
 100 105 110
 Ile Val His Gly Glu Glu Arg His Phe Glu Leu Ala Gln Ala His Ile
 115 120 125
 Glu Asp Asp Ala Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val
 130 135 140
 Asp Tyr Asn Arg Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro
 145 150 155 160
 Cys Met Phe Cys Ala Asp Asp Ala Val Ala Tyr Ala Thr Ala Leu Val
 165 170 175
 Ser Leu Leu Asp Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly
 180 185 190
 Ser Val Arg Phe Asp Val Asn Ile Ser Val Arg Pro Lys Gly Ser Glu
 195 200 205
 Glu Leu Arg Asn Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe
 210 215 220
 Met Ala Gln Ala Leu Glu Ala Glu Arg Cys Arg Gln Ile Asp Ala Tyr

225		230		235		240
Leu Asp Asn Pro	Asn Ala Asp Pro Lys Thr Val Ile Pro Gly Ala Thr					
	245		250		255	
Tyr Arg Trp Asp Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys						
	260		265		270	
Glu Arg Ala Glu Asp Tyr Lys Tyr Phe Ile Glu Pro Asp Leu Pro Val						
	275		280		285	
Leu Gln Leu Thr Glu Ala Tyr Ile Asp Glu Ile Arg His Thr Leu Pro						
	290		295		300	
Glu Leu Pro Phe Asn Lys Tyr Gln Arg Tyr Leu His Glu Tyr Ala Leu						
	305		310		315	320
Ala Glu Asp Ile Ala Ala Ile Leu Ile Ser Asp Lys His Ser Ala His						
	325		330		335	
Phe Phe Glu Leu Ala Ala Gln Glu Cys Lys Asn Tyr Arg Ala Leu Ser						
	340		345		350	
Asn Trp Leu Thr Val Glu Phe Ala Gly Arg Cys Lys Leu Lys Gly Lys						
	355		360		365	
Asn Leu Ala Phe Ser Gly Ile Leu Pro Ser Ser Val Ala Gln Leu Val						
	370		375		380	
Asn Phe Ile Asp Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Asp Ile						
	385		390		395	400
Ala Asp Met Met Met Glu Ser Pro Glu Lys Ser Pro Glu Thr Ile Leu						
	405		410		415	
Lys Glu Asn Pro Glu Met Leu Pro Met Thr Asp Glu Ser Ala Leu Val						
	420		425		430	
Ala Ile Ile Ser Glu Val Ile Thr Ala Asn Pro Gln Ser Val Val Asp						
	435		440		445	
Tyr Lys Ser Gly Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile						
	450		455		460	
Met Lys Arg Thr Gln Gly Lys Ala Pro Pro Asn Arg Val Asn Glu Leu						
	465		470		475	480
Leu Leu Val Glu Leu Ser Lys						
	485					

<210> 20
 <211> 379
 <212> DNA

<213> Chlamydia psittaci

<400> 20

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gatatgtact caccttcctt gaagtttcaa cttgtgcata cgcaccaaga tgactttaag 360
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<210> 21

<211> 126

<212> PRT

<213> Chlamydia psittaci

<400> 21

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Tyr Gln His Ile Ser Tyr Trp Ser Ala Trp Gln Asn Leu Leu Gln Asn
      20              25              30

Thr Ile Gly Ala Glu Ala Pro Leu Val Leu Asn Ala Gln Leu Thr Tyr
      35              40              45

Cys His Ala Ser Asn Asp Met Lys Thr Asn Met Thr Thr Thr Tyr Ala
      50              55              60

Pro Arg Lys Thr Thr Tyr Ala Glu Ile Lys Gly Asp Trp Gly Asn Asp
      65              70              75              80

Cys Phe Gly Val Glu Leu Gly Ala Thr Val Pro Ile Gln Thr Glu Ser
      85              90              95

Ser Leu Leu Phe Asp Met Tyr Ser Pro Phe Leu Lys Phe Gln Leu Val
      100             105             110

His Thr His Gln Asp Asp Phe Lys Glu Asn Asn Ser Asp Gln
      115             120             125
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<210> 22

<211> 2520

<212> DNA

<213> Chlamydia psittaci

<400> 22

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aatgtgtgta tctcctttgc agggaaagat tcaggtctaa agaaaagttg tttctcagct 240
actgataacc ttaccttcct aggaaacggg tatactcttt gctttgataa tattactact 300
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acagctagta accccggagc cattaatgtt caaggtcaag gaaaaacctt aggcattctca 360
ggattttctt tattttcatg tgcttattgt cctccaggca caactgggta cggagctata 420
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<210> 23
 <211> 839
 <212> PRT
 <213> Chlamydia psittaci

<400> 23
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 20 25 30
 Ser Asp Ser Tyr Asn Gly Asn Val Thr Ser Glu Glu Phe Gln Val Lys
 35 40 45

Glu Thr Ser Ser Gly Thr Thr Tyr Thr Cys Glu Gly Asn Val Cys Ile
 50 55 60
 Ser Phe Ala Gly Lys Asp Ser Gly Leu Lys Lys Ser Cys Phe Ser Ala
 65 70 75 80
 Thr Asp Asn Leu Thr Phe Leu Gly Asn Gly Tyr Thr Leu Cys Phe Asp
 85 90 95
 Asn Ile Thr Thr Thr Ala Ser Asn Pro Gly Ala Ile Asn Val Gln Gly
 100 105 110
 Gln Gly Lys Thr Leu Gly Ile Ser Gly Phe Ser Leu Phe Ser Cys Ala
 115 120 125
 Tyr Cys Pro Pro Gly Thr Thr Gly Tyr Gly Ala Ile Gln Thr Lys Gly
 130 135 140
 Asn Thr Thr Leu Lys Asp Asn Ser Ser Leu Val Phe His Lys Asn Cys
 145 150 155 160
 Ser Thr Ala Glu Gly Gly Ala Ile Gln Cys Lys Gly Ser Ser Asp Ala
 165 170 175
 Glu Leu Lys Ile Glu Asn Asn Gln Asn Leu Val Phe Ser Glu Asn Ser
 180 185 190
 Ser Thr Ser Lys Gly Gly Ala Ile Tyr Ala Asp Lys Leu Thr Ile Val
 195 200 205
 Ser Gly Gly Pro Thr Leu Phe Ser Asn Asn Ser Val Ser Asn Gly Ser
 210 215 220
 Ser Pro Lys Gly Gly Ala Ile Ser Ile Lys Asp Ser Ser Gly Glu Cys
 225 230 235 240
 Ser Leu Thr Ala Asp Leu Gly Asp Ile Thr Phe Asp Gly Asn Lys Ile
 245 250 255
 Ile Lys Thr Ser Gly Gly Ser Ser Thr Val Thr Arg Asn Ser Ile Asp
 260 265 270
 Leu Gly Thr Gly Lys Phe Thr Lys Leu Arg Ala Lys Asp Gly Phe Gly
 275 280 285
 Ile Phe Phe Tyr Asp Pro Ile Thr Gly Gly Gly Ser Asp Glu Leu Asn
 290 295 300
 Ile Asn Lys Lys Glu Thr Val Asp Tyr Thr Gly Lys Ile Val Phe Ser
 305 310 315 320
 Gly Glu Lys Leu Ser Asp Glu Glu Lys Ala Arg Ala Glu Asn Leu Ala
 325 330 335

Ser Thr Phe Asn Gln Pro Ile Thr Leu Ser Ala Gly Ser Leu Val Leu
 340 345 350
 Lys Asp Gly Val Ser Val Thr Ala Lys Gln Val Thr Gln Glu Ala Gly
 355 360 365
 Ser Thr Val Val Met Asp Leu Gly Thr Thr Leu Gln Thr Pro Ser Ser
 370 375 380
 Gly Gly Glu Thr Ile Thr Leu Thr Asn Leu Asp Ile Asn Ile Ala Ser
 385 390 395 400
 Leu Gly Gly Gly Gly Gly Thr Ser Pro Ala Lys Leu Ala Thr Asn Thr
 405 410 415
 Ala Ser Gln Ala Ile Thr Ile Asn Ala Val Asn Leu Val Asp Ala Asp
 420 425 430
 Gly Asn Ala Tyr Glu Asp Pro Ile Leu Ala Thr Ser Lys Pro Phe Thr
 435 440 445
 Ala Ile Val Ala Thr Thr Asn Ala Ser Thr Val Thr Gln Pro Thr Asp
 450 455 460
 Asn Leu Thr Asn Tyr Val Pro Pro Thr His Tyr Gly Tyr Gln Gly Asn
 465 470 475 480
 Trp Thr Val Thr Trp Asp Thr Glu Thr Ala Thr Lys Thr Ala Thr Leu
 485 490 495
 Thr Trp Glu Gln Thr Gly Tyr Ser Pro Asn Pro Glu Arg Gln Gly Pro
 500 505 510
 Leu Val Pro Asn Thr Leu Trp Gly Ala Phe Ser Asp Leu Arg Ala Ile
 515 520 525
 Gln Asn Leu Met Asp Ile Ser Val Asn Gly Ala Asp Tyr His Arg Gly
 530 535 540
 Phe Trp Val Ser Gly Leu Ala Asn Phe Leu His Lys Ser Gly Ser Asp
 545 550 555 560
 Thr Lys Arg Lys Phe Arg His Asn Ser Ala Gly Tyr Ala Leu Gly Val
 565 570 575
 Tyr Ala Lys Thr Pro Ser Asp Asp Ile Phe Ser Ala Ala Phe Cys Gln
 580 585 590
 Leu Phe Gly Lys Asp Lys Asp Tyr Leu Val Ser Lys Asn Asn Ala Asn
 595 600 605
 Ile Tyr Ala Gly Ser Leu Tyr Tyr Gln His Ile Ser Tyr Trp Ser Ala
 610 615 620

Trp Gln Asn Leu Leu Gln Asn Thr Ile Gly Ala Glu Ala Pro Leu Val
625 630 635 640

Leu Asn Ala Gln Leu Thr Tyr Cys His Ala Ser Asn Asp Met Lys Thr
645 650 655

Asn Met Thr Thr Thr Tyr Ala Pro Arg Lys Thr Thr Tyr Ala Glu Ile
660 665 670

Lys Gly Asp Trp Gly Asn Asp Cys Phe Gly Val Glu Leu Gly Ala Thr
675 680 685

Val Pro Ile Gln Thr Glu Ser Ser Leu Leu Phe Asp Met Tyr Ser Pro
690 695 700

Phe Leu Lys Phe Gln Leu Val His Thr His Gln Asp Asp Phe Lys Glu
705 710 715 720

Asn Asn Ser Asp Gln Gly Arg Tyr Phe Glu Ser Ser Asn Leu Thr Asn
725 730 735

Leu Ser Leu Pro Ile Gly Ile Lys Phe Glu Arg Phe Ala Asn Asn Asp
740 745 750

Thr Ala Ser Tyr His Val Thr Ala Ala Tyr Ser Pro Asp Ile Val Arg
755 760 765

Ser Asn Pro Asp Cys Thr Thr Ser Leu Leu Val Ser Pro Asp Ser Ala
770 775 780

Val Trp Val Thr Lys Ala Asn Asn Leu Ala Arg Ser Ala Phe Met Leu
785 790 795 800

Gln Ala Gly Asn Tyr Leu Ser Leu Ser His Asn Ile Glu Ile Phe Ser
805 810 815

Gln Phe Gly Phe Glu Leu Arg Gly Ser Ser Arg Thr Tyr Asn Val Asp
820 825 830

Leu Gly Ser Lys Ile Gln Phe
835

<210> 24

<211> 1039

<212> DNA

<213> Chlamydia psittaci

<400> 24

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<210> 25

<211> 196

<212> PRT

<213> Chlamydia psittaci

<400> 25

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Tyr Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Val Gln Met
20 25 30

Val Lys Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Asp Val Arg Pro
35 40 45

Thr Leu Ile Lys Lys Ile Val Thr Thr Ser Gly Lys Glu Tyr Val Leu
50 55 60

His Pro Gln Val Arg Gly Glu Arg Ile Leu Ser Gln Asp Ile Val Asp
65 70 75 80

Glu Val Leu Lys Ala Thr Arg Phe Thr Thr Tyr Pro Gly Gly Thr Gly
85 90 95

Phe Arg Ala Ala Pro Lys Lys His Ser Ser Ala Gly Lys Thr Gly Thr
100 105 110

Thr Glu Lys Leu Val His Gly Lys Tyr Asp Lys His Arg His Ile Ser
115 120 125

Ser Phe Ile Gly Ile Thr Pro Ile Tyr Pro Ser Ala Gly Gly Ser Val
130 135 140

Pro Leu Val Met Leu Val Ser Ile Ser Tyr Thr Thr Asp Asn Gly Ser
145 150 155 160

Gln Val Tyr Val Val Gln Leu Arg His Glu Gly Ile Glu Ile Cys Arg
165 170 175

Gln Phe Val His Val Asn Leu Ile Val Trp Ser Leu Ser Leu Ser Leu
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Tyr Tyr Leu Pro
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<210> 26
<211> 1950
<212> DNA
<213> Chlamydia psittaci

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<210> 27
<211> 649
<212> PRT
<213> Chlamydia psittaci

<400> 27

25103618.1

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Pro	Leu	Thr	Leu	Ala	Ile	Ala	Leu	Leu	Ala	Asn	Glu	Glu	Met	Val	Lys	325	330	335	
Arg	Ser	Gly	Lys	Pro	Leu	Phe	Asp	Pro	Asn	Glu	Pro	Ile	Asp	Val	Thr	340	345	350	
Arg	Arg	Ile	Phe	Pro	Gly	Arg	Lys	Gln	Phe	Pro	Leu	Lys	Asp	Ile	Ser	355	360	365	
Ser	Asn	Arg	Arg	Leu	Asn	Met	Tyr	Met	Ala	Ile	Gln	Lys	Ser	Ser	Asn	370	375	380	
Val	Tyr	Val	Ala	Gln	Leu	Ala	Asp	Leu	Ile	Val	Gln	His	Leu	Gly	Asn	385	390	395	400
His	Trp	Tyr	Glu	Asp	Lys	Leu	Leu	Leu	Leu	Gly	Phe	Gly	Lys	Lys	Thr	405	410	415	
Gly	Ile	Glu	Leu	Pro	Gly	Glu	Ala	Ser	Gly	Leu	Val	Pro	Ser	Pro	Lys	420	425	430	
Arg	Phe	His	Ile	Asn	Gly	Val	Pro	Glu	Trp	Ser	Leu	Ser	Thr	Pro	Tyr	435	440	445	
Ser	Leu	Ala	Met	Gly	Tyr	Asn	Ile	Leu	Ala	Thr	Gly	Val	Gln	Met	Val	450	455	460	
Lys	Ala	Tyr	Ala	Ile	Leu	Ala	Asn	Gly	Gly	Tyr	Asp	Val	Arg	Pro	Thr	465	470	475	480
Leu	Ile	Lys	Lys	Ile	Val	Thr	Thr	Ser	Gly	Lys	Glu	Tyr	Val	Leu	His	485	490	495	
Pro	Gln	Val	Arg	Gly	Glu	Arg	Ile	Leu	Ser	Gln	Asp	Ile	Val	Asp	Glu	500	505	510	
Val	Leu	Lys	Ala	Thr	Arg	Phe	Thr	Thr	Tyr	Pro	Gly	Gly	Thr	Gly	Phe	515	520	525	
Arg	Ala	Ala	Pro	Lys	Lys	His	Ser	Ser	Ala	Gly	Lys	Thr	Gly	Thr	Thr	530	535	540	
Glu	Lys	Leu	Val	His	Gly	Lys	Tyr	Asp	Lys	His	Arg	His	Ile	Ser	Ser	545	550	555	560
Phe	Ile	Gly	Ile	Thr	Pro	Ile	Tyr	Pro	Ser	Ala	Gly	Gly	Ser	Val	Pro	565	570	575	

Leu Val Met Leu Val Ser Ile Asp Asp Pro Asp His Cys Val Arg Glu
580 585 590

Asp Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Val Phe
595 600 605

Gly Arg Val Ala Asp Arg Val Leu Ser Tyr Leu Gly Val Pro Glu Asp
610 615 620

Lys Glu Lys Tyr Ser Tyr Gln Ser Glu Val Ala Ala Met Lys Ala Leu
625 630 635 640

Tyr Glu Glu Trp Asn Arg Ser Gly Lys
645

<210> 28
<211> 960
<212> DNA
<213> Chlamydia psittaci

<400> 28
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tttcgtaatg acgttatccg ctctgaagat atctttgggt tagctaagga agcaatatct 180
catgttgcat taatgatcgc ttcgttgata gtgagccgtg atcatcctac agggaattct 240
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<210> 29
<211> 258
<212> PRT
<213> Chlamydia psittaci

<400> 29
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Asn Tyr Thr Ile Arg Lys His Thr Leu Glu Tyr Asp Asp Val Met Asn
20 25 30
Arg Gln Arg Gln Thr Ile Tyr Ala Phe Arg Asn Asp Val Ile Arg Ser
35 40 45

Glu Asp Ile Phe Gly Leu Ala Lys Glu Ala Ile Ser His Val Ala Leu
50 55 60

Met Ile Ala Ser Leu Ile Val Ser Arg Asp His Pro Thr Gly Asn Ser
65 70 75 80

Leu Pro Arg Leu Glu Glu Trp Met Asn Tyr Ser Phe Pro Leu Gln Leu
85 90 95

Asn Ile Glu Glu Leu Lys Arg Leu Lys Ser Ile Asp Ala Ile Ala Glu
100 105 110

Arg Val Ala Asp Asp Leu Ile Glu Val Phe Gln Asn Lys Phe Ala Ser
115 120 125

Met Val Gln Glu Ile Thr Glu Ala Ala Gly Glu Lys Val Asp Ala Asn
130 135 140

Gly Val Cys Lys Asp Val Ile Arg Ser Val Met Ile Met His Ile Asp
145 150 155 160

Glu Gln Trp Lys Ile His Leu Val Asp Met Asp Leu Leu Arg Ser Glu
165 170 175

Val Gly Leu Arg Thr Val Gly Gln Lys Asp Pro Leu Ile Glu Phe Lys
180 185 190

His Glu Ser Phe Leu Leu Phe Glu Ser Leu Ile Arg Asp Ile Arg Ile
195 200 205

Ala Ile Val Lys His Leu Phe Arg Leu Glu Leu Thr Met Thr Arg Glu
210 215 220

Gln Arg Pro Gln Asn Val Val Pro Val Val Ala Thr Ser Phe Gln Asn
225 230 235 240

Asn Glu Asn Phe Gly Pro Leu Glu Leu Thr Val Ile Ser Asp Ser Asp
245 250 255

Asp Glu

<210> 30

<211> 697

<212> DNA

<213> Chlamydia psittaci

<400> 30

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cctttaatta tttctggtcc tggggaaaaa cataatcctg tgtatttcga actcaaagat 180
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 gaagctatct ccgaattttg ccgtagctta tggtagtta gtaaggggaat gccttttaaat 360
 cgtgttttgc gtagagtgcg cgaacaccca gatttgcgag ccatgataga taaatgggat 420
 acttattatc atgctgagca aaataaagaa gagagtatag agaagctatc tcagctgtat 480
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 gtggataagg ctggagggtc tgctgaagat tttgtcatga tggacatggg gcatgaatat 600
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<210> 31
 <211> 232
 <212> PRT
 <213> Chlamydia psittaci

<400> 31
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Gln Val Gly Arg Gly Phe Tyr Phe Ala Ile Ile Asp Glu Val Asp Ser
 20 25 30

Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu Ile Ile Ser Gly Pro Gly
 35 40 45

Glu Lys His Asn Pro Val Tyr Phe Glu Leu Lys Asp Lys Val Ala Asp
 50 55 60

Leu Val Gln Leu Gln Arg Glu Leu Cys Asn Gln Leu Ala Leu Glu Ala
 65 70 75 80

Arg Arg Gly Leu Glu Leu Phe Leu Asp Met Asp Ile Leu Pro Lys Asp
 85 90 95

Lys Lys Val Ile Glu Ala Ile Ser Glu Phe Cys Arg Ser Leu Trp Leu
 100 105 110

Val Ser Lys Gly Met Pro Leu Asn Arg Val Leu Arg Arg Val Arg Glu
 115 120 125

His Pro Asp Leu Arg Ala Met Ile Asp Lys Trp Asp Thr Tyr Tyr His
 130 135 140

Ala Glu Gln Asn Lys Glu Glu Ser Ile Glu Lys Leu Ser Gln Leu Tyr
 145 150 155 160

Ile Ile Val Asp Glu His Asn Asn Asp Phe Glu Leu Thr Asp Arg Gly
 165 170 175

Met Gln Gln Trp Val Asp Lys Ala Gly Gly Ser Ala Glu Asp Phe Val
 180 185 190

Met Met Asp Met Gly His Glu Tyr Ala Leu Ile Asp Gly Asp Asp Thr
 195 200 205

Leu Ser Pro Thr Glu Lys Ile Asn Arg Lys Ile Ala Ile Ser Glu Glu
 210 215 220

Asp Thr Arg Arg Lys Ala Arg Ala
 225 230

<210> 32
 <211> 2910
 <212> DNA
 <213> Chlamydia psittaci

<400> 32
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 atttatcggt gtgacgttgt ctacggtaca gcatcagagt tcgggtttga ttatctcaga 600
 gataattcta ttgcaacttc tgtggatgag cagggtgggac gtgggtttta ttttgctatt 660
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 gatcacaatg acgaatttta tatgacagag cgtgaaaagt accacgcgat tgtaaggaa 1680
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<210> 33
<211> 969
<212> PRT
<213> Chlamydia psittaci

<400> 33
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Leu Lys Lys Phe Gln Lys Leu Val Asp Lys Val Asn Leu Tyr Asp Glu
20 25 30
Met Leu Ala Pro Leu Ser Asp Glu Glu Leu Arg Asn Lys Thr Ala Glu
35 40 45
Leu Lys Lys Arg Tyr Gln Asp Gly Glu Ser Leu Asp Asp Met Leu Pro
50 55 60
Glu Ala Tyr Ala Val Val Lys Asn Val Cys Arg Arg Leu Thr Gly Thr
65 70 75 80
Pro Val Glu Val Ser Gly Tyr His Gln Asn Trp Asp Met Val Pro Tyr
85 90 95
Asp Val Gln Val Leu Gly Ala Ile Ala Met His Lys Gly Phe Ile Thr
100 105 110
Glu Met Gln Thr Gly Glu Gly Lys Thr Leu Thr Ala Val Met Pro Leu
115 120 125
Tyr Leu Asn Ala Leu Thr Gly Lys Pro Val His Leu Val Thr Val Asn
130 135 140
Asp Tyr Leu Ala Gln Arg Asp Cys Glu Trp Val Gly Ser Ile Leu Arg
145 150 155 160
Trp Leu Gly Leu Thr Thr Gly Val Leu Ile Ser Gly Ser Pro Leu Glu
165 170 175
Lys Arg Lys Asp Ile Tyr Arg Cys Asp Val Val Tyr Gly Thr Ala Ser
180 185 190
Glu Phe Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile Ala Thr Ser Val

195					200					205					
Asp	Glu	Gln	Val	Gly	Arg	Gly	Phe	Tyr	Phe	Ala	Ile	Ile	Asp	Glu	Val
210					215					220					
Asp	Ser	Ile	Leu	Ile	Asp	Glu	Ala	Arg	Thr	Pro	Leu	Ile	Ile	Ser	Gly
225					230					235					240
Pro	Gly	Glu	Lys	His	Asn	Pro	Val	Tyr	Phe	Glu	Leu	Lys	Asp	Lys	Val
				245					250					255	
Ala	Asp	Leu	Val	Gln	Leu	Gln	Arg	Glu	Leu	Cys	Asn	Gln	Leu	Ala	Leu
			260					265					270		
Glu	Ala	Arg	Arg	Gly	Leu	Glu	Leu	Phe	Leu	Asp	Met	Asp	Ile	Leu	Pro
			275					280					285		
Lys	Asp	Lys	Lys	Val	Ile	Glu	Ala	Ile	Ser	Glu	Phe	Cys	Arg	Ser	Leu
	290					295					300				
Trp	Leu	Val	Ser	Lys	Gly	Met	Pro	Leu	Asn	Arg	Val	Leu	Arg	Arg	Val
305					310					315					320
Arg	Glu	His	Pro	Asp	Leu	Arg	Ala	Met	Ile	Asp	Lys	Trp	Asp	Thr	Tyr
				325					330					335	
Tyr	His	Ala	Glu	Gln	Asn	Lys	Glu	Glu	Ser	Ile	Glu	Lys	Leu	Ser	Gln
			340					345					350		
Leu	Tyr	Ile	Ile	Val	Asp	Glu	His	Asn	Asn	Asp	Phe	Glu	Leu	Thr	Asp
			355					360					365		
Arg	Gly	Met	Gln	Gln	Trp	Val	Asp	Lys	Ala	Gly	Gly	Ser	Ala	Glu	Asp
	370					375					380				
Phe	Val	Met	Met	Asp	Met	Gly	His	Glu	Tyr	Ala	Leu	Ile	Asp	Gly	Asp
385						390					395				400
Asp	Thr	Leu	Ser	Pro	Thr	Glu	Lys	Ile	Asn	Arg	Lys	Ile	Ala	Ile	Ser
				405					410					415	
Glu	Glu	Asp	Thr	Arg	Arg	Lys	Ala	Arg	Ala	His	Gly	Leu	Arg	Gln	Leu
			420					425					430		
Leu	Arg	Ala	His	Leu	Leu	Met	Glu	Arg	Asp	Val	Asp	Tyr	Ile	Val	Arg
			435					440					445		
Asn	Asp	Gln	Ile	Val	Ile	Ile	Asp	Glu	His	Thr	Gly	Arg	Pro	Gln	Pro
	450					455					460				
Gly	Arg	Arg	Phe	Ser	Glu	Gly	Leu	His	Gln	Ala	Ile	Glu	Ala	Lys	Glu
465						470					475				480
His	Val	Thr	Ile	Arg	Lys	Glu	Ser	Gln	Thr	Phe	Ala	Thr	Val	Thr	Leu

770	775	780
Asp His Pro Thr Gly Asn Ser Leu Pro Arg Leu Glu Glu Trp Met Asn 785 790 795 800		
Tyr Ser Phe Pro Leu Gln Leu Asn Ile Glu Glu Leu Lys Arg Leu Lys 805 810 815		
Ser Ile Asp Ala Ile Ala Glu Arg Val Ala Asp Asp Leu Ile Glu Val 820 825 830		
Phe Gln Asn Lys Phe Ala Ser Met Val Gln Glu Ile Thr Glu Ala Ala 835 840 845		
Gly Glu Lys Val Asp Ala Asn Gly Val Cys Lys Asp Val Ile Arg Ser 850 855 860		
Val Met Ile Met His Ile Asp Glu Gln Trp Lys Ile His Leu Val Asp 865 870 875 880		
Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr Val Gly Gln Lys 885 890 895		
Asp Pro Leu Ile Glu Phe Lys His Glu Ser Phe Leu Leu Phe Glu Ser 900 905 910		
Leu Ile Arg Asp Ile Arg Ile Ala Ile Val Lys His Leu Phe Arg Leu 915 920 925		
Glu Leu Thr Met Thr Arg Glu Gln Arg Pro Gln Asn Val Val Pro Val 930 935 940		
Val Ala Thr Ser Phe Gln Asn Asn Glu Asn Phe Gly Pro Leu Glu Leu 945 950 955 960		
Thr Val Ile Ser Asp Ser Asp Asp Glu 965		

<210> 34
 <211> 577
 <212> DNA
 <213> Chlamydia psittaci

<400> 34
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 aacagtctat acctagaaga tgtccgtact tcccaataca ccaatgtcgt tgtcatatcgt 120
 gctgaagata tggaagactc gagaatgcat aaactaaaac agctattgca aagcagttct 180
 gtgcaggatt tctttaatac gaaatataag gggatctttt tatcgcagta acacatctgg 240
 atggcttagg gaagagttga gccaccccggt tctccgtagg tttaaggcat attgggaaac 300
 gattttcttg aattttttga aaaactttga ctgtttttct tttgattatt cgaagcagat 360
 gtatgtcgag tatggcggtt ttagggccca gaggtccttt cagttctcct ttacatggt 420
 ctctataccc aaccaccta aaaatgcact tgctaggttc cattcctata gttggcatat 480
 acattggagc gaagcggata gccgccgttg ctcaatatca tagaatgtgt agagcgaata 540

caggagtgtc tcaggtgatt attcaggatt caggatt

577

<210> 35

<211> 76

<212> PRT

<213> Chlamydia psittaci

<400> 35

Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Gly Gly Ile
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Cys Pro Tyr Lys Asn Ser Leu Tyr Leu Glu Asp Val Arg Thr Ser Gln
20 25 30

Tyr Thr Asn Val Val Val Ile Arg Ala Glu Asp Met Glu Asp Ser Arg
35 40 45

Met His Lys Leu Lys Gln Leu Leu Gln Ser Ser Ser Val Gln Asp Phe
50 55 60

Phe Asn Thr Lys Tyr Lys Gly Ile Phe Leu Ser Gln
65 70 75

<210> 36

<211> 804

<212> DNA

<213> Chlamydia psittaci

<400> 36

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tatagtttag aaaaggaggc tcaatccctt ggattgcaat tgaaaatact tcccatagat 180
gattaccgtg tacctaaccg tttgctttta gataagcaaa tagaggcaaa ttattttccaa 240
catgaagatt tcttaaaaga tgagtgtgct cggtagcaat gcgaaggaaa acttgcgatt 300
ttgggctaagg tacatttaga acctatgggt ttatattcta ataaaaccca gtctctcgaa 360
gagcttaaag tcaaggaaca gctacgtata gcggttccta tagatagaac aaacgaacaa 420
cgtgcgctag acttattgcg agactgcaat ttgattagtt acaaagaagc ttctcatcta 480
gatatcaccg caaaagatgt ctttggttgt ggagggaaaa aggtaacgat tatagagatg 540
gcagcacctt tattagtatc ttctttacca gacgttgatg ctgcagttat tccagggaac 600
ttcgccattg cagggggaat ctgtccgtat aaaaacagtc tatacctaga agatgtccgt 660
acttcccaat acaccaatgt cgttgtcata cgtgctgaag atatggaaga ctcgagaatg 720
cataaactaa aacagctatt gcaaagcagt tctgtgcagg atttctttaa tacgaaatat 780
aaggggatct ttttatcgca gtaa 804

<210> 37

<211> 267

<212> PRT

<213> Chlamydia psittaci

<400> 37

Met Lys Lys Ile Thr Ile Leu Ser Leu Leu Ala Leu Ala Ile Ser Leu

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Thr Gly Cys Cys Lys Asn Ser Glu Gly Val Leu Arg Ile Ala Ala Ser	20	25	30
Pro Thr Pro His Ala Glu Leu Leu Tyr Ser Leu Glu Lys Glu Ala Gln	35	40	45
Ser Leu Gly Leu Gln Leu Lys Ile Leu Pro Ile Asp Asp Tyr Arg Val	50	55	60
Pro Asn Arg Leu Leu Leu Asp Lys Gln Ile Glu Ala Asn Tyr Phe Gln	65	70	75
His Glu Asp Phe Leu Lys Asp Glu Cys Ala Arg Tyr Gln Cys Glu Gly	85	90	95
Lys Leu Ala Ile Leu Ala Lys Val His Leu Glu Pro Met Gly Leu Tyr	100	105	110
Ser Asn Lys Thr Gln Ser Leu Glu Glu Leu Lys Val Lys Glu Gln Leu	115	120	125
Arg Ile Ala Val Pro Ile Asp Arg Thr Asn Glu Gln Arg Ala Leu Asp	130	135	140
Leu Leu Arg Asp Cys Asn Leu Ile Ser Tyr Lys Glu Ala Ser His Leu	145	150	155
Asp Ile Thr Ala Lys Asp Val Phe Gly Cys Gly Gly Lys Lys Val Thr	165	170	175
Ile Ile Glu Met Ala Ala Pro Leu Leu Val Ser Ser Leu Pro Asp Val	180	185	190
Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Gly Gly Ile Cys	195	200	205
Pro Tyr Lys Asn Ser Leu Tyr Leu Glu Asp Val Arg Thr Ser Gln Tyr	210	215	220
Thr Asn Val Val Val Ile Arg Ala Glu Asp Met Glu Asp Ser Arg Met	225	230	235
His Lys Leu Lys Gln Leu Leu Gln Ser Ser Ser Val Gln Asp Phe Phe	245	250	255
Asn Thr Lys Tyr Lys Gly Ile Phe Leu Ser Gln	260	265	

<210> 38
 <211> 402
 <212> DNA

<213> Chlamydia psittaci

<400> 38

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catgtatttt acgcaaaaaa taaacggtat aactcctgct tacaagccgc gctataccac 60
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ctaatacaga agtacttttc catcaaacia cgatgcttaa atctaaaaga tttccatttt 180
tatgatgttt atgctccctt aagtcagtc aaagagaaaa aatatacgtt ccaagaagct 240
gtggatctta tctatactag cctttctcct ctaggaacgg aatacattga taccttaaaa 300
caggggttaa caactcaagg ctgggtagat aaatacgaaa atcttaataa acgctccgga 360
gcctattctt cgggatgtta cgatagccac cttatgtcc tc 402
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<210> 39

<211> 134

<212> PRT

<213> Chlamydia psittaci

<400> 39

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His Val Phe Tyr Ala Lys Asn Lys Arg Tyr Asn Ser Cys Leu Gln Ala
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Ala Leu Tyr His Asn Asn Ile Pro Thr Thr Val Tyr Thr Asn Leu Ile
          20             25             30
Asp Ile Val Lys Lys Asn Ser Ser Leu Ile Thr Lys Tyr Phe Ser Ile
          35             40             45
Lys Gln Arg Cys Leu Asn Leu Lys Asp Phe His Phe Tyr Asp Val Tyr
          50             55             60
Ala Pro Leu Ser Gln Ser Lys Glu Lys Lys Tyr Thr Phe Gln Glu Ala
          65             70             75             80
Val Asp Leu Ile Tyr Thr Ser Leu Ser Pro Leu Gly Thr Glu Tyr Ile
          85             90             95
Asp Thr Leu Lys Gln Gly Leu Thr Thr Gln Gly Trp Val Asp Lys Tyr
          100            105            110
Glu Asn Leu Asn Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr Asp
          115            120            125
Ser His Pro Tyr Val Leu
          130
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<210> 40

<211> 1827

<212> DNA

<213> Chlamydia psittaci

<400> 40

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tgttgggata tcacccctt atatctaaat agaaaagcat ggaaagcaga tcttgattct 120
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ttcggattaa aaacagacgg ctacacctacg tggcccgctc ttcaagcaac gcaataccaa 180
ctggacaact cagaatctct actatcctta ttaactactc tcttctctat tgagagaaaa 240
ttaaacaacac tctacgttta cgctcatctg actcatgatc aggatattac aaatcaagaa 300
ggcatcgcag atcttaaate tatcacgcac ctacatacct tatttgccga agaaacctct 360
tgggtacaac ccgctttaac cagcctatcg gaatctctca ttgctcagca cctatcagct 420
ccctgttttag ctctttatag attctattta gagaaaatct ttagactatc tatacacaca 480
ggcactcctg gagaagaaaa aattctcgct tccgccttta ctctcttga agtagccagt 540
aaggcatttt cttctttaag tgactctgaa attccctttg ggcaagctac agactcagaa 600
ggaaactctc acccgctttc tcatgcactg gcttcattgt atatgcaatc cacagatcgg 660
gaattacgaa aaacatccta cctagcacia tgtgaaagat atcatagtta ccgacatacc 720
tttgctaact tactcaatgg gaaaatccaa gcccatgtat ttacgcaaa aaataaacgg 780
tataactcct gcttacaagc cgcgctatac cacaataata tcccgacaac cgtgtacaca 840
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tatctcaact ttttaaaaag tgggtggatca gatttccct tagaaatctt aaaaaaatca 1740
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<210> 41
 <211> 608
 <212> PRT
 <213> Chlamydia psittaci

<400> 41
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 Ala Trp Lys Ala Asp Leu Asp Ser Phe Gly Leu Lys Thr Asp Gly Ser
 35 40 45
 Pro Thr Trp Pro Ala Leu Gln Ala Thr Gln Tyr Gln Leu Asp Asn Ser
 50 55 60
 Glu Ser Leu Leu Ser Leu Leu Thr Thr Leu Phe Ser Ile Glu Arg Lys
 65 70 75 80
 Leu Asn Lys Leu Tyr Val Tyr Ala His Leu Thr His Asp Gln Asp Ile
 85 90 95

Leu Leu Asn Tyr Thr Gly Thr Leu Tyr Asp Val Ser Val Ile Ala His
385 390 395 400

Glu Gly Gly His Ser Met His Ser Tyr Phe Ser Arg Lys His Gln Pro
405 410 415

Phe His Asp Ala Gln Tyr Pro Ile Phe Leu Ala Glu Ile Ala Ser Thr
420 425 430

Leu Asn Glu Met Leu Leu Met Asp Ser Met Leu Lys Glu Ser Asp Ser
435 440 445

Lys Glu Glu Lys Ile Thr Ile Leu Thr Arg Cys Leu Asp Thr Ile Phe
450 455 460

Ser Thr Leu Phe Arg Gln Val Leu Phe Ala Ser Phe Glu Tyr Asp Ile
465 470 475 480

His His Ala Ala Glu His Gly Val Pro Leu Thr Glu Glu Tyr Leu Ser
485 490 495

Ser Thr Tyr Lys Asn Leu Gln Asn Glu Phe Tyr Gly Glu Ile Ile Thr
500 505 510

Phe Asp Val Leu Ser Asn Ile Glu Trp Ala Arg Ile Pro His Phe Tyr
515 520 525

Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr Gly Ile Ile Ala Ala Leu
530 535 540

Cys Phe Leu Glu Lys Ile Leu Asn Asn Glu Asp Asn Ala Leu Asn Ser
545 550 555 560

Tyr Leu Asn Phe Leu Lys Ser Gly Gly Ser Asp Phe Pro Leu Glu Ile
565 570 575

Leu Lys Lys Ser Gly Leu Asp Met Gly Thr Val Glu Pro Ile Gln Lys
580 585 590

Ala Phe Cys Phe Ile Glu Lys Lys Ile Gln Glu Leu Ser Ser Leu Ile
595 600 605

<210> 42

<211> 1517

<212> DNA

<213> Chlamydia psittaci

<400> 42

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gcacaatcca ctctacaaca agatcaaaat aaactatcgc aagaacattt tgaagctgtc 120
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aacttacaaa ccaaaaaaga agaagaacac gagtccgttg cccgtaagat ggtcaattgg 240
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attgaacgac gtacacttga ctaccgttgt cggtcgtata actgaagtcg tcggtatggt 540
aattaaagct gtcgttccca atgtacgcgt tggggaggta tgcttagtta aacgttatgg 600
tatggagccg ctctgtgaccg aagtcgtcgc cttcacacaa aatttcgctt ttttatcgcc 660
actaggagaa cttactggag tcagcccttc ttcagagggtt attcccacag gtctgccttt 720
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cgactccgag atcaaaggac ctttggttga tgtaaacgaa acctaccctg tgtttcgcgc 840
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cacagtactt gttgccgggg atgatatgaa tgaaccggtc gctgatgaag ttaaatacgat 1440
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<210> 43
 <211> 145
 <212> PRT
 <213> Chlamydia psittaci

<400> 43
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 Arg Leu Trp Asp Ala Gln Ser Thr Leu Gln Gln Asp Gln Asn Lys Leu
 20 25 30
 Ser Gln Glu His Phe Glu Ala Val Ser Val Ile Ile Asp Leu Ile Asn
 35 40 45
 Gly Asp Leu Asn Asp Ile Ala Glu His Thr Gln Gln Asn Leu Gln Thr
 50 55 60
 Lys Lys Glu Glu Glu His Glu Ser Val Ala Arg Lys Met Val Asn Trp
 65 70 75 80
 Val Ser Ser Gly Glu Glu Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser
 85 90 95
 Asp Arg Asn Gly Glu Arg Glu Asn Leu Ala Asp Phe Leu Lys Val Gln
 100 105 110

Tyr Ala Val Gln Arg Ala Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile
 115 120 125

Val Gly Thr Thr Val Ser Ser Ile Lys Thr Ile Met Thr Thr Gln Leu
 130 135 140

Gly
 145

<210> 44
 <211> 669
 <212> DNA
 <213> Chlamydia psittaci

<400> 44
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 ttagggacgg cagcagactc cttgaataaa aatatagagg atgtcaagcc taaccctatg 180
 gcgatgatgc aagacagaaa ctctaacatt atcgatcctg aactggaaga ggcgttagat 240
 tcggaagagc tgaaagagca aataaacaat ctaaaagagc gtttatggga tgcacaatcc 300
 actctacaac aagatcaaaa taaactatcg caagaacatt ttgaagctgt cagtgtgatc 360
 attgatttaa tcaatggtga tctgaatgat atagctgagc atacgcaaca aaacttacia 420
 accaaaaaag aagaagaaca cgagtccggt gcccgtaaga tgggtcaattg ggtgtcttct 480
 ggagaagaag tgtaaataag agcccttctc tacttctcag ataggaatgg agaacgggaa 540
 aatttagcag actttttaaa agtacagtat gctgttcaaa gagcaacgca aagagcagaa 600
 ctttttgcta gtatcgtagg aactacggta agtagtataa agacgataat gaccacacaa 660
 ttaggttaa 669

<210> 45
 <211> 222
 <212> PRT
 <213> Chlamydia psittaci

<400> 45
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 20 25 30
 His Lys Glu Val Pro Ala Phe Ser Leu Gly Thr Ala Ala Asp Ser Leu
 35 40 45
 Asn Lys Asn Ile Glu Asp Val Lys Pro Asn Pro Met Ala Met Met Gln
 50 55 60
 Asp Arg Asn Ser Asn Ile Ile Asp Pro Glu Leu Glu Glu Ala Leu Asp
 65 70 75 80
 Ser Glu Glu Leu Lys Glu Gln Ile Asn Asn Leu Lys Glu Arg Leu Trp
 85 90 95

<210> 47
 <211> 442
 <212> PRT
 <213> Chlamydia psittaci

<400> 47

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Asp	Val	His	Leu	Thr	Thr	Val	Val	Gly	Arg	Ile	Thr	Glu	Val	Val	Gly
			20					25					30		
Met	Leu	Ile	Lys	Ala	Val	Val	Pro	Asn	Val	Arg	Val	Gly	Glu	Val	Cys
			35					40					45		
Leu	Val	Lys	Arg	Tyr	Gly	Met	Glu	Pro	Leu	Val	Thr	Glu	Val	Val	Gly
			50			55					60				
Phe	Thr	Gln	Asn	Phe	Ala	Phe	Leu	Ser	Pro	Leu	Gly	Glu	Leu	Thr	Gly
			65			70				75					80
Val	Ser	Pro	Ser	Ser	Glu	Val	Ile	Pro	Thr	Gly	Leu	Pro	Leu	Tyr	Ile
				85					90					95	
Arg	Ala	Gly	Asn	Gly	Leu	Leu	Gly	Arg	Val	Leu	Asn	Gly	Leu	Gly	Glu
			100					105					110		
Pro	Ile	Asp	Ser	Glu	Ile	Lys	Gly	Pro	Leu	Val	Asp	Val	Asn	Glu	Thr
			115				120						125		
Tyr	Pro	Val	Phe	Arg	Ala	Pro	Pro	Asp	Pro	Leu	His	Arg	Glu	Lys	Leu
			130				135					140			
Arg	Thr	Ile	Leu	Ser	Thr	Gly	Val	Arg	Cys	Ile	Asp	Gly	Met	Leu	Thr
			145			150				155					160
Val	Ala	Arg	Gly	Gln	Arg	Ile	Gly	Ile	Phe	Ala	Gly	Ala	Gly	Val	Gly
				165					170					175	
Lys	Ser	Ser	Leu	Leu	Gly	Met	Ile	Ala	Arg	Asn	Ala	Glu	Glu	Ala	Asp
			180					185					190		
Val	Asn	Val	Ile	Ala	Leu	Ile	Gly	Glu	Arg	Gly	Arg	Glu	Val	Arg	Glu
			195				200					205			
Phe	Ile	Glu	Gly	Asp	Leu	Gly	Glu	Glu	Gly	Met	Lys	Arg	Ser	Val	Ile
			210			215					220				
Val	Val	Ser	Thr	Ser	Asp	Gln	Ser	Ser	Gln	Leu	Arg	Leu	Asn	Ala	Ala
			225			230				235				240	
Tyr	Val	Gly	Thr	Ala	Ile	Ala	Glu	Tyr	Phe	Arg	Asp	Gln	Gly	Lys	Thr

245					250					255					
Val	Val	Leu	Met	Met	Asp	Ser	Val	Thr	Arg	Phe	Ala	Arg	Ala	Leu	Arg
			260						265					270	
Glu	Val	Gly	Leu	Ala	Ala	Gly	Glu	Pro	Pro	Ala	Arg	Gly	Gly	Tyr	Thr
			275						280					285	
Pro	Ser	Val	Phe	Ser	Thr	Leu	Pro	Arg	Leu	Leu	Glu	Arg	Ser	Gly	Ala
			290						295					300	
Ser	Asp	Lys	Gly	Thr	Ile	Thr	Ala	Phe	Tyr	Thr	Val	Leu	Val	Ala	Gly
			305						310					315	
Asp	Asp	Met	Asn	Glu	Pro	Val	Ala	Asp	Glu	Val	Lys	Ser	Ile	Leu	Asp
				325					330					335	
Gly	His	Val	Val	Leu	Ser	Asn	Ala	Leu	Ala	Gln	Ala	Tyr	His	Tyr	Pro
				340					345					350	
Ala	Ile	Asp	Val	Leu	Ala	Ser	Ile	Ser	Arg	Leu	Leu	Thr	Ala	Ile	Val
				355					360					365	
Pro	Glu	Glu	Gln	Arg	Arg	Ile	Ile	Gly	Lys	Ala	Arg	Glu	Val	Leu	Ala
				370					375					380	
Lys	Tyr	Lys	Ala	Asn	Glu	Met	Leu	Ile	Arg	Ile	Gly	Glu	Tyr	Arg	Arg
				385					390					395	
Gly	Ser	Asp	Arg	Glu	Val	Asp	Phe	Ala	Ile	Asp	His	Ile	Asp	Lys	Leu
				405					410					415	
Asn	Arg	Phe	Leu	Lys	Gln	Asp	Ile	His	Glu	Lys	Thr	Asn	Tyr	Glu	Glu
				420					425					430	
Ala	Ser	Gln	Gln	Leu	Arg	Ala	Ile	Phe	Arg						
				435					440						

<210> 48

<211> 477

<212> DNA

<213> Chlamydia psittaci

<400> 48

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atcacctttg aacacataaa tcaattaaaa ccagcaaaca ctagctgttt tgctaataca 180
gctggagatc taacgtttac tgggaatcga cgacttctct atttcaataa tatttcatca 240
acagcgaaag gtgccgctat cagcacaact gcggatggta agacactcac aatatccggg 300
gctctacaac tgattttcta catgtcgcca agattggcca cgggaaatgg cgtcatttat 360
tctaatagct ctgtactcat cgagaacaat tctcaaggta gctcgggact gaataagtct 420
gcagggaaag gcgtctttat ttgttgtagag aaaagtacgg atgtggggagc tacatca 477

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<210> 49
 <211> 159
 <212> PRT
 <213> Chlamydia psittaci

<400> 49
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 Ser Thr Ser Glu Thr Phe Asn Val Lys Gln Thr Asp Asn Ala Asp Gly
 20 25 30
 Thr Thr Tyr Ile Leu Gly Ser Ala Ile Thr Phe Glu His Ile Asn Gln
 35 40 45
 Leu Lys Pro Ala Asn Thr Ser Cys Phe Ala Asn Thr Ala Gly Asp Leu
 50 55 60
 Thr Phe Thr Gly Asn Arg Arg Leu Leu Tyr Phe Asn Asn Ile Ser Ser
 65 70 75 80
 Thr Ala Lys Gly Ala Ala Ile Ser Thr Thr Ala Asp Gly Lys Thr Leu
 85 90 95
 Thr Ile Ser Gly Ala Leu Gln Leu Ile Phe Tyr Met Ser Pro Arg Leu
 100 105 110
 Ala Thr Gly Asn Gly Val Ile Tyr Ser Asn Ser Ser Val Leu Ile Glu
 115 120 125
 Asn Asn Ser Gln Gly Ser Ser Gly Leu Asn Lys Ser Ala Gly Lys Gly
 130 135 140
 Val Phe Ile Cys Cys Glu Lys Ser Thr Asp Val Gly Ala Thr Ser
 145 150 155

<210> 50
 <211> 591
 <212> DNA
 <213> Chlamydia psittaci

<400> 50
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 ggagatctaa cgtttactgg gaatcgacga cttctctatt tcaataatat ttcatcaaca 120
 gcgaaagggtg ccgctatcag cacaactgcg gatggtaaga cactcacaat atccggggct 180
 ctacaactga ttttctacat gtcgccaaaga ttggccacgg gaaatggcgt catttattct 240
 aatagctctg tactcatcga gaacaattct caaggtagct cgggactgaa taagtctgca 300
 gggaaaggcg tctttatttg ttgtgagaaa agtacggatg tgggagctac atcaccgaca 360
 ttaatcatat ggaataacgg agagtttctt actgtaggta atgcagctac tagctctgga 420
 ggagcgattt atgcggagaa aatgatctta tcctcaggag gatatacaaaa atttcaatcc 480
 aatgttagct atgatcaagg tggggccatt gccattgctc ctaatggaga aattagtctc 540
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<210> 51
 <211> 197
 <212> PRT
 <213> Chlamydia psittaci

<400> 51
 Thr Phe Glu His Ile Asn Gln Leu Lys Pro Ala Asn Thr Ser Cys Phe
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 Ala Asn Thr Ala Gly Asp Leu Thr Phe Thr Gly Asn Arg Arg Leu Leu
 20 25 30
 Tyr Phe Asn Asn Ile Ser Ser Thr Ala Lys Gly Ala Ala Ile Ser Thr
 35 40 45
 Thr Ala Asp Gly Lys Thr Leu Thr Ile Ser Gly Ala Leu Gln Leu Ile
 50 55 60
 Phe Tyr Met Ser Pro Arg Leu Ala Thr Gly Asn Gly Val Ile Tyr Ser
 65 70 75 80
 Asn Ser Ser Val Leu Ile Glu Asn Asn Ser Gln Gly Ser Ser Gly Leu
 85 90 95
 Asn Lys Ser Ala Gly Lys Gly Val Phe Ile Cys Cys Glu Lys Ser Thr
 100 105 110
 Asp Val Gly Ala Thr Ser Pro Thr Leu Ile Ile Arg Asn Asn Gly Glu
 115 120 125
 Phe Leu Thr Val Gly Asn Ala Ala Thr Ser Ser Gly Gly Ala Ile Tyr
 130 135 140
 Ala Glu Lys Met Ile Leu Ser Ser Gly Gly Tyr Thr Lys Phe Gln Ser
 145 150 155 160
 Asn Val Ser Tyr Asp Gln Gly Gly Ala Ile Ala Ile Ala Pro Asn Gly
 165 170 175
 Glu Ile Ser Leu Ser Ala Asp Lys Gly Asn Ile Val Phe Glu Arg Asn
 180 185 190
 Leu Lys Ile Ala Asn
 195

<210> 52
 <211> 2040
 <212> DNA
 <213> Chlamydia psittaci

<400> 52

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aacggctcca ctagtgaaac tttcaatgtt aaacaaacag ataatgctga cgggacaaca 180
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gtacaagctc cgtcttttga tcaacgtgct cactcccaac tattcatgaa tcctgggacg 1140
aagttacaag ctaccagaa catctcggtg aagaatctcc atctcaatct taatagaata 1200
gcagaagagc cggcgtatat caccacaaca gacgatgctt ctagtgtgga catttgcgga 1260
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tcgggctcta tctatgctca gcattcgaga cgcttacttc ctataatgag attccttgca 1920
ggaacatcaa catatagacc gcgactctta ctgagtattc ccaagaatct tcctatcaat 1980
tttgatgttc ttgtgagtta cagctatgac agtaaccaca tgaaagtaca aaaattctaa 2040

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<210> 53
 <211> 679
 <212> PRT
 <213> Chlamydia psittaci

<400> 53
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 20 25 30
 Ser Val Asn Leu Ala Thr Gly Phe Asn Gly Ser Thr Ser Glu Thr Phe
 35 40 45
 Asn Val Lys Gln Thr Asp Asn Ala Asp Gly Thr Thr Tyr Ile Leu Gly
 50 55 60

Ser Ala Ile Thr Phe Glu His Ile Asn Gln Leu Lys Pro Ala Asn Thr
 65 70 75 80
 Ser Cys Phe Ala Asn Thr Ala Gly Asp Leu Thr Phe Thr Gly Asn Arg
 85 90 95
 Arg Leu Leu Tyr Phe Asn Asn Ile Ser Ser Thr Ala Lys Gly Ala Ala
 100 105 110
 Ile Ser Thr Thr Ala Asp Gly Lys Thr Leu Thr Ile Ser Gly Ala Leu
 115 120 125
 Gln Leu Ile Phe Tyr Met Ser Pro Arg Leu Ala Thr Gly Asn Gly Val
 130 135 140
 Ile Tyr Ser Asn Ser Ser Val Leu Ile Glu Asn Asn Ser Gln Gly Ser
 145 150 155 160
 Ser Gly Leu Asn Lys Ser Ala Gly Lys Gly Val Phe Ile Cys Cys Glu
 165 170 175
 Lys Ser Thr Asp Val Gly Ala Thr Ser Pro Thr Leu Ile Ile Arg Asn
 180 185 190
 Asn Gly Glu Phe Leu Thr Val Gly Asn Ala Ala Thr Ser Ser Gly Gly
 195 200 205
 Ala Ile Tyr Ala Glu Lys Met Ile Leu Ser Ser Gly Gly Tyr Thr Lys
 210 215 220
 Phe Gln Ser Asn Val Ser Tyr Asp Gln Gly Gly Ala Ile Ala Ile Ala
 225 230 235 240
 Pro Asn Gly Glu Ile Ser Leu Ser Ala Asp Lys Gly Asn Ile Val Phe
 245 250 255
 Glu Arg Asn Leu Lys Ile Ala Asn Lys Gln Asn Thr Pro Asn Ala Ile
 260 265 270
 His Leu Gly Asp Asn Ala Lys Phe Leu Gln Leu Arg Ala Ala Asn Asn
 275 280 285
 Lys Ala Ile Phe Phe Tyr Asp Pro Ile Thr Thr Thr Gly Ser Val Ala
 290 295 300
 Asp Arg Leu Ile Ile Asn Asn Ser Gln Gly Glu Ala Ser Thr Tyr Asp
 305 310 315 320
 Gly Ala Ile Val Phe Ser Ser Leu Asn Leu Phe Thr His Ser Pro Glu
 325 330 335
 Cys Lys Leu Ser Ser Phe Ser Gln Gly Leu Thr Leu Ala Ala Gly Ser
 340 345 350

Leu Val Leu Glu Glu Gly Val Cys Val Gln Ala Pro Ser Phe Asp Gln
 355 360 365
 Arg Ala His Ser Gln Leu Phe Met Asn Pro Gly Thr Lys Leu Gln Ala
 370 375 380
 Thr Gln Asn Ile Ser Val Lys Asn Leu His Leu Asn Leu Asn Arg Ile
 385 390 395 400
 Ala Glu Glu Pro Ala Tyr Ile Thr Thr Thr Asp Asp Ala Ser Ser Val
 405 410 415
 Asp Ile Cys Gly Pro Val Val Met His Ile Asp Asp Glu Ile Phe Tyr
 420 425 430
 Asn Gln Thr Val Leu Ala Asn Glu Leu Ser Val Glu Cys Leu Asn Leu
 435 440 445
 Ser Ser Pro His Leu Asp Asn Ile Thr Ile Asp Asp Val Pro Ala Val
 450 455 460
 Pro Ile Met Thr Leu Glu Ser His Arg Gly Tyr Gln Gly Thr Trp Glu
 465 470 475 480
 Ile Ser Trp Lys Glu Gln Pro Lys Leu Thr Phe Gly Lys Ala Thr Ile
 485 490 495
 Ala Pro Asn Lys Gln Met His Leu Ile Trp Lys Pro Ser Gly Tyr Val
 500 505 510
 Pro Phe Ser Gly Gly Thr Gly Glu Phe Thr Thr Ser Leu Val Pro Asn
 515 520 525
 Ser Leu Trp Asn Leu Phe Leu Asp Thr Arg Phe Ser Gln Gln Ala Ile
 530 535 540
 Glu Lys His Ala Val Ser Ser Gly Asn Gly Ile Trp Ile Ser Ser Met
 545 550 555 560
 Thr Asn Ser Phe Leu Gln Gly Ser Thr Asn Asn Asn His Gly Phe Arg
 565 570 575
 His Lys Ser Ser Gly Tyr Thr Ala Gly Gly Lys Ile Gln Thr Leu Gln
 580 585 590
 Asp Asp Ile Phe Ser Val Ser Phe Ser Gln Leu Phe Gly Arg Ser Lys
 595 600 605
 Asp Phe Gly Ser Ala Thr Ser Lys Asp Thr Phe Leu Ser Gly Ser Ile
 610 615 620
 Tyr Ala Gln His Ser Arg Arg Leu Leu Pro Ile Met Arg Phe Leu Ala
 625 630 635 640

Gly Thr Ser Thr Tyr Arg Pro Arg Leu Leu Leu Ser Ile Pro Lys Asn
645 650 655

Leu Pro Ile Asn Phe Asp Val Leu Val Ser Tyr Ser Tyr Asp Ser Asn
660 665 670

His Met Lys Val Gln Lys Phe
675

<210> 54
<211> 487
<212> DNA
<213> Chlamydia psittaci

<400> 54
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agcaagtttg atgatctcac gcggttattt aatgggccta acacgtgttg ttcagggttt 180
tctaaagaga ttctatttt cttggatgca caaattacct attgccacac ggccaacaac 240
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ggcttaactt tgtctactag cgtacctatc ccggtattta gttcttctat ctttgatagt 360
tatgcaccgt ttgcaaaaatt acaagttgtc tatgcgcacc aagatgactt taaagaacca 420
acaacagaag gccgggtctt tgaaagcagc gatcttctca acgtttctgt acctataggt 480
ataaaat 487

<210> 55
<211> 162
<212> PRT
<213> Chlamydia psittaci

<400> 55
Thr Ser Arg Glu Asp Ser Leu Ser Val Ala Phe Cys Gln Leu Phe Ala
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Lys Asp Lys Asp Tyr Leu Val Ser Lys Asn Ala Ala Asn Val Tyr Ala
20 25 30
Gly Ser Val Tyr Tyr Gln His Val Ser Lys Phe Asp Asp Leu Thr Arg
35 40 45
Leu Phe Asn Gly Pro Asn Thr Cys Cys Ser Gly Phe Ser Lys Glu Ile
50 55 60
Pro Ile Phe Leu Asp Ala Gln Ile Thr Tyr Cys His Thr Ala Asn Asn
65 70 75 80
Met Thr Thr Ser Tyr Thr Asp Tyr Pro Glu Val Lys Gly Ser Trp Gly
85 90 95
Asn Asp Thr Leu Gly Leu Thr Leu Ser Thr Ser Val Pro Ile Pro Val
100 105 110

Phe Ser Ser Ser Ile Phe Asp Ser Tyr Ala Pro Phe Ala Lys Leu Gln
 115 120 125

Val Val Tyr Ala His Gln Asp Asp Phe Lys Glu Pro Thr Thr Glu Gly
 130 135 140

Arg Val Phe Glu Ser Ser Asp Leu Leu Asn Val Ser Val Pro Ile Gly
 145 150 155 160

Ile Lys

<210> 56
 <211> 2781
 <212> DNA
 <213> Chlamydia psittaci

<400> 56
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 ggagcattca gtccgcaatc tacaagcact gcgggaggaa cgatttaca cgtcgagagt 180
 gatatttcta ttgtagatgt aggacagaca gcggctcttg cttcctcagc ttttgttcag 240
 actgcagaca acctaacttt caaagggaac aaccatagct tatccataac gaacgcgaat 300
 gccggagcta atcctgcggg aattaacggt aacactgccg ataagattct tacgctgaca 360
 gatttttcta agttgagctt taaggaaatgc ccatcttctc tagtgaatac tggaaaaggg 420
 gctatgaaat ccggaggagc attaaactta gcgaataatg ccagtattct gtttgatcag 480
 aactaatccg ctgagaatgg tggagccatc tcttgcaaaag ctttttctct aaccggctcg 540
 agcaaagaaa tcagcttcac cactaactct actgcgaaaa aagggtggagc gattgctgct 600
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 gtgaattctg ggggagcagt atattcagaa gcttctatga cgattgcagg taacaaccac 720
 gttgctttta gcaacaatgc tgtttccggt tcatctgatg gttgcggtgg agctatccat 780
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 tctggtgggc ctacggcatt tatcaataac aaagttacc atgctacacc taagggtgga 960
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 gatgtcttgg aacgtagtgt tgatagtatt cttgagacac gtcgtggttt gtgggtctct 1920
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 gctagacaag ctttcatagt tcgcgcgggt aaccatattg ccttaacctc tgggtgttag 2700
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<210> 57
 <211> 926
 <212> PRT
 <213> Chlamydia psittaci

<400> 57
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 Pro Ile Ser Phe His Phe Ser Gln Leu His Ala Glu Val Ala Leu Thr
 20 25 30
 Gln Glu Ser Ile Leu Asp Ala Asn Gly Ala Phe Ser Pro Gln Ser Thr
 35 40 45
 Ser Thr Ala Gly Gly Thr Ile Tyr Asn Val Glu Ser Asp Ile Ser Ile
 50 55 60
 Val Asp Val Gly Gln Thr Ala Ala Leu Ala Ser Ser Ala Phe Val Gln
 65 70 75 80
 Thr Ala Asp Asn Leu Thr Phe Lys Gly Asn Asn His Ser Leu Ser Ile
 85 90 95
 Thr Asn Ala Asn Ala Gly Ala Asn Pro Ala Gly Ile Asn Val Asn Thr
 100 105 110
 Ala Asp Lys Ile Leu Thr Leu Thr Asp Phe Ser Lys Leu Ser Phe Lys
 115 120 125
 Glu Cys Pro Ser Ser Leu Val Asn Thr Gly Lys Gly Ala Met Lys Ser
 130 135 140
 Gly Gly Ala Leu Asn Leu Ala Asn Asn Ala Ser Ile Leu Phe Asp Gln
 145 150 155 160
 Asn Tyr Ser Ala Glu Asn Gly Gly Ala Ile Ser Cys Lys Ala Phe Ser
 165 170 175
 Leu Thr Gly Ser Ser Lys Glu Ile Ser Phe Thr Thr Asn Ser Thr Ala

180					185					190					
Lys	Lys	Gly	Gly	Ala	Ile	Ala	Ala	Thr	Gly	Ile	Ala	His	Leu	Ser	Asp
		195					200					205			
Asn	Gln	Gly	Thr	Ile	Arg	Phe	Ser	Gly	Asn	Thr	Ala	Val	Asn	Ser	Gly
	210					215					220				
Gly	Ala	Val	Tyr	Ser	Glu	Ala	Ser	Met	Thr	Ile	Ala	Gly	Asn	Asn	His
225						230					235				240
Val	Ala	Phe	Ser	Asn	Asn	Ala	Val	Ser	Gly	Ser	Ser	Asp	Gly	Cys	Gly
				245					250					255	
Gly	Ala	Ile	His	Cys	Ser	Lys	Thr	Gly	Ser	Ala	Pro	Thr	Leu	Thr	Ile
			260					265					270		
Arg	Asp	Asn	Lys	Val	Leu	Ile	Phe	Glu	Glu	Asn	Thr	Ser	Ser	Ala	Lys
		275					280					285			
Gly	Gly	Ala	Ile	Tyr	Thr	Asp	Lys	Leu	Ile	Leu	Thr	Ser	Gly	Gly	Pro
	290					295					300				
Thr	Ala	Phe	Ile	Asn	Asn	Lys	Val	Thr	His	Ala	Thr	Pro	Lys	Gly	Gly
305						310					315				320
Ala	Ile	Gly	Ile	Ala	Ala	Asn	Gly	Glu	Cys	Ser	Leu	Thr	Ala	Glu	His
				325					330					335	
Gly	Asp	Ile	Thr	Phe	Asp	Asn	Asn	Leu	Met	Ala	Thr	Gln	Asp	Asn	Ala
			340					345					350		
Thr	Ile	Lys	Arg	Asn	Ala	Ile	Asn	Ile	Glu	Gly	Asn	Gly	Lys	Phe	Val
		355					360					365			
Asn	Leu	Arg	Ala	Ala	Ser	Gly	Lys	Thr	Ile	Ser	Phe	Tyr	Asp	Pro	Ile
	370					375					380				
Thr	Val	Glu	Gly	Asn	Ala	Ala	Asp	Leu	Leu	Thr	Leu	Asn	Lys	Ala	Glu
385						390					395				400
Gly	Asp	Lys	Thr	Tyr	Asn	Gly	Arg	Ile	Ile	Phe	Ser	Gly	Glu	Lys	Leu
				405					410					415	
Thr	Glu	Glu	Gln	Ala	Ala	Val	Ala	Asp	Asn	Leu	Lys	Thr	Thr	Phe	Thr
			420					425					430		
Gln	Pro	Ile	Thr	Leu	Ala	Ala	Gly	Glu	Leu	Val	Leu	Arg	Ser	Gly	Val
		435					440					445			
Glu	Val	Glu	Ala	Lys	Thr	Val	Val	Gln	Thr	Ala	Gly	Ser	Leu	Ile	Leu
	450					455					460				
Met	Asp	Ala	Gly	Thr	Lys	Leu	Ser	Ala	Lys	Thr	Glu	Asp	Ala	Thr	Leu

465		470		475		480
Thr Asn Leu Ala Ile Asn Pro Asn Thr Leu Asp Gly Lys Lys Phe Ala						
	485			490		495
Val Val Asp Ala Val Ala Ala Gly Lys Asn Val Thr Leu Ser Gly Ala						
	500			505		510
Ile Gly Val Ile Asp Pro Thr Gly Lys Phe Tyr Glu Asn His Lys Leu						
	515			520		525
Asn Asp Thr Leu Ala Leu Gly Gly Ile Gln Leu Ser Gly Lys Gly Ser						
	530			535		540
Val Thr Thr Thr Asn Val Pro Ser His Val Val Gly Val Ala Glu Thr						
	545			550		555
His Tyr Gly Tyr Gln Gly Asn Trp Ser Val Ser Trp Val Lys Asp Asn						
	565			570		575
Asn Ser Asp Pro Lys Thr Gln Thr Ala Ile Phe Thr Trp Asn Lys Thr						
	580			585		590
Gly Tyr Val Pro Asn Pro Glu Arg Arg Ala Pro Leu Val Leu Asn Ser						
	595			600		605
Leu Trp Gly Ser Phe Ile Asp Leu Arg Ser Ile Gln Asp Val Leu Glu						
	610			615		620
Arg Ser Val Asp Ser Ile Leu Glu Thr Arg Arg Gly Leu Trp Val Ser						
	625			630		635
Gly Ile Gly Asn Phe Phe His Lys Asp Arg Asn Ala Glu Asn Arg Lys						
	645			650		655
Phe Arg His Ile Ser Ser Gly Tyr Val Leu Gly Ala Thr Thr Asn Thr						
	660			665		670
Ser Arg Glu Asp Ser Leu Ser Val Ala Phe Cys Gln Leu Phe Ala Lys						
	675			680		685
Asp Lys Asp Tyr Leu Val Ser Lys Asn Ala Ala Asn Val Tyr Ala Gly						
	690			695		700
Ser Val Tyr Tyr Gln His Val Ser Lys Phe Asp Asp Leu Thr Arg Leu						
	705			710		715
Phe Asn Gly Pro Asn Thr Cys Cys Ser Gly Phe Ser Lys Glu Ile Pro						
	725			730		735
Ile Phe Leu Asp Ala Gln Ile Thr Tyr Cys His Thr Ala Asn Asn Met						
	740			745		750
Thr Thr Ser Tyr Thr Asp Tyr Pro Glu Val Lys Gly Ser Trp Gly Asn						

755	760	765
Asp Thr Leu Gly Leu Thr	Leu Ser Thr Ser Val	Pro Ile Pro Val Phe
770	775	780
Ser Ser Ser Ile Phe Asp	Ser Tyr Ala Pro Phe	Ala Lys Leu Gln Val
785	790	795 800
Val Tyr Ala His Gln Asp	Asp Phe Lys Glu Pro	Thr Thr Glu Gly Arg
805	810	815
Val Phe Glu Ser Ser Asp	Leu Leu Asn Val Ser	Val Pro Ile Gly Ile
820	825	830
Lys Phe Glu Lys Leu Ser	Tyr Gly Glu Arg Ser	Ala Tyr Asp Leu Thr
835	840	845
Leu Met Tyr Ile Pro Asp	Val Tyr Arg His Asn	Pro Ser Cys Met Thr
850	855	860
Gly Leu Ala Ile Asn Asp	Val Ser Trp Leu Thr	Thr Ala Thr Asn Leu
865	870	875 880
Ala Arg Gln Ala Phe Ile	Val Arg Ala Gly Asn	His Ile Ala Leu Thr
885	890	895
Ser Gly Val Glu Met Phe	Ser Gln Phe Gly Phe	Glu Leu Arg Ser Ser
900	905	910
Ser Arg Asn Tyr Asn Val	Asp Leu Gly Ala Lys	Val Ala Phe
915	920	925

<210> 58
 <211> 559
 <212> DNA
 <213> Chlamydia psittaci

<400> 58
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 tttcatcaga ttcttggtct gaagatcata gaaattgttt ttttagccct accgtttact 180
 tgtcacgcta tcctaggtat tttctatctt tttcaagcgc aaactaattc acgggcttct 240
 gacggcagaa aaccgcggtt aatctatgcg agaaatcttg cctatacttg gcagagaaga 300
 actgcttgga ttttactttt cggctcttatt tttcacgtag ttcagtttcg ttttcttcgt 360
 tatcctattc atgtagagct gcatgggcaa acatactatg ttgtcgatat tgacgcttct 420
 cggtatgctg cgatagtgcg gggtacacaa ggatttttta ctataaattt ttcagctcct 480
 caacttgaaa cgattcgttt ggataaagag gatcttgacg gcagcgcagt ttctcaatta 540
 ttagacagaa aagcgtatc 559

<210> 59
 <211> 186
 <212> PRT

<213> Chlamydia psittaci

<400> 59

Cys Val His Ser Leu Ala Gly Val Ala Phe Thr Leu Phe Leu Cys Glu
1 5 10 15

His Met Phe Thr Asn Met Leu Ala Ser Ser Tyr Phe Lys Glu Gly Ser
20 25 30

Gly Phe Val Gln Leu Val Ser Lys Phe His Gln Ile Pro Gly Leu Lys
35 40 45

Ile Ile Glu Ile Val Phe Leu Ala Leu Pro Phe Thr Cys His Ala Ile
50 55 60

Leu Gly Ile Phe Tyr Leu Phe Gln Ala Gln Thr Asn Ser Arg Ala Ser
65 70 75 80

Asp Gly Arg Lys Pro Ala Leu Ile Tyr Ala Arg Asn Leu Ala Tyr Thr
85 90 95

Trp Gln Arg Arg Thr Ala Trp Ile Leu Leu Phe Gly Leu Ile Phe His
100 105 110

Val Val Gln Phe Arg Phe Leu Arg Tyr Pro Ile His Val Glu Leu His
115 120 125

Gly Gln Thr Tyr Tyr Val Val Asp Ile Asp Ala Ser Arg Tyr Ala Ala
130 135 140

Ile Val Arg Gly Thr Gln Gly Phe Phe Thr Ile Asn Phe Ser Ala Pro
145 150 155 160

Gln Leu Glu Thr Ile Arg Leu Asp Lys Glu Asp Leu Asp Gly Ser Ala
165 170 175

Val Ser Gln Leu Leu Asp Arg Lys Ala Tyr
180 185

<210> 60

<211> 687

<212> DNA

<213> Chlamydia psittaci

<400> 60

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gagcatatgt ttaccaatat gcttgcttct tcttatttta aggaaggcag tgggtttgtt 180
cagttagtga gcaaatttca tcagattcct ggtctgaaga tcatagaaat tggtttttta 240
gccctaccgt ttacttgta cgctatccta ggtattttct atctttttca agcgaaaact 300
aattcacggg cttctgacgg cagaaaaccc gcgttaatct atgcgagaaa tcttgacctat 360
acttggcaga gaagaactgc ttggatttta ctttccggtc ttatttttca cgtagttcag 420
tttcgttttc ttcgttatcc tattcatgta gagctgcatg ggcaaacata ctatgttggtc 480

gatattgacg cttctcggta tgcggcgata gtgcggggta cacaaggatt ttttactata 540
aatttttcag ctctcaact tgaaacgatt cgtttggata aagaggatct tgacggcagc 600
gcagtttctc aattattaga cagaaaagcg tatctcctga ctcctaattgt tggaccgctt 660
ttctttatgt tgttcgggat tcttttag 687

<210> 61

<211> 228

<212> PRT

<213> Chlamydia psittaci

<400> 61

Met Met Asn Glu Lys Glu Ser Cys Ser Glu Ala Thr Gln Arg Ser Trp
1 5 10 15

Lys Tyr Tyr Thr Ser Phe Val Leu Arg Cys Val His Ser Leu Ala Gly
20 25 30

Val Ala Phe Thr Leu Phe Leu Cys Glu His Met Phe Thr Asn Met Leu
35 40 45

Ala Ser Ser Tyr Phe Lys Glu Gly Ser Gly Phe Val Gln Leu Val Ser
50 55 60

Lys Phe His Gln Ile Pro Gly Leu Lys Ile Ile Glu Ile Val Phe Leu
65 70 75 80

Ala Leu Pro Phe Thr Cys His Ala Ile Leu Gly Ile Phe Tyr Leu Phe
85 90 95

Gln Ala Gln Thr Asn Ser Arg Ala Ser Asp Gly Arg Lys Pro Ala Leu
100 105 110

Ile Tyr Ala Arg Asn Leu Ala Tyr Thr Trp Gln Arg Arg Thr Ala Trp
115 120 125

Ile Leu Leu Phe Gly Leu Ile Phe His Val Val Gln Phe Arg Phe Leu
130 135 140

Arg Tyr Pro Ile His Val Glu Leu His Gly Gln Thr Tyr Tyr Val Val
145 150 155 160

Asp Ile Asp Ala Ser Arg Tyr Ala Ala Ile Val Arg Gly Thr Gln Gly
165 170 175

Phe Phe Thr Ile Asn Phe Ser Ala Pro Gln Leu Glu Thr Ile Arg Leu
180 185 190

Asp Lys Glu Asp Leu Asp Gly Ser Ala Val Ser Gln Leu Leu Asp Arg
195 200 205

Lys Ala Tyr Leu Leu Thr Pro Asn Val Gly Pro Leu Phe Phe Met Leu
210 215 220

Phe Gly Ile Leu
225

<210> 62
<211> 1329
<212> DNA
<213> Chlamydia psittaci

<400> 62
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gcccacgcct atctatttttc tgggaattcgt ggtacagggg aaaccacact agctcgcatt 180
ttagcaaaaag ctctgaactg cgtgcatctt agcgaggatg gcgagccctg caaccagtgt 240
ttttcttgta aagagattgc ttcaggatcc tcttttagacg ttttagaaat tgacggagcc 300
tcccaccgtg gtatcgaaga tatccgtcaa attaatgaaa ctgtattatt cactcctgta 360
aaagcaaagt ttaaaattta tatcatagat gaagttcata tgctcactaa ggaagccttc 420
aatgctttat tgaagacttt agaagagcct ccacaacatg taaaattttt ctttgcaact 480
acagaaatcc ataaaattcc cggaactatt ttaagtcgtt gtcaaaaaat gcattctcaa 540
aggattcctg aaaaaacgat cctggagaag ctatcgctta tggctcaaga tgaccatatt 600
gaggcgtcgc aagaagcatt ggcgcgcgac gcccggtgcag cacaaggaag cttgctgat 660
gcagaatctc tttatgacta cgtaatatct ttatttccta aatctctctc tcccgcacacg 720
gttgcccaag ctttaggctt tgcttcccaa gattctctcc ggactttaga caatgcgatt 780
cttcaaaggg actatgcgac agccttaggg atcgtaacgg acttcttaaa ttctggggta 840
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tctacaacaa gcaagttcag ctctcagtat aagacggagc agcttctaga aatcatagat 960
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tctattaaga gtcggcagtt tgaagggtt cgcaatatta aggagccac cttgacgcag 1140
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aatcaacctg ctgcggaagg taaaattata tctgtagaag ttaaaagctc agcttcaata 1260
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agacaataa 1329

<210> 63
<211> 442
<212> PRT
<213> Chlamydia psittaci

<400> 63
Met Thr Leu Gln Pro Tyr Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln
1 5 10 15
Ile Phe Arg Glu Ile Leu Gly Gln Ser Ser Val Val Ala Val Leu Lys
20 25 30
Asn Ala Leu Val Phe Asn Arg Ala Ala His Ala Tyr Leu Phe Ser Gly
35 40 45
Ile Arg Gly Thr Gly Lys Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala
50 55 60
Leu Asn Cys Val His Leu Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys

65		70		75		80
Phe Ser Cys Lys Glu Ile Ala Ser Gly Ser Ser Leu Asp Val Leu Glu						
	85			90		95
Ile Asp Gly Ala Ser His Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn						
	100			105		110
Glu Thr Val Leu Phe Thr Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile						
	115			120		125
Ile Asp Glu Val His Met Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu						
	130			135		140
Lys Thr Leu Glu Glu Pro Pro Gln His Val Lys Phe Phe Phe Ala Thr						
	145			150		155
Thr Glu Ile His Lys Ile Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys						
	165			170		175
Met His Leu Gln Arg Ile Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser						
	180			185		190
Leu Met Ala Gln Asp Asp His Ile Glu Ala Ser Gln Glu Ala Leu Ala						
	195			200		205
Pro Ile Ala Arg Ala Ala Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu						
	210			215		220
Tyr Asp Tyr Val Ile Ser Leu Phe Pro Lys Ser Leu Ser Pro Asp Thr						
	225			230		235
Val Ala Gln Ala Leu Gly Phe Ala Ser Gln Asp Ser Leu Arg Thr Leu						
	245			250		255
Asp Asn Ala Ile Leu Gln Arg Asp Tyr Ala Thr Ala Leu Gly Ile Val						
	260			265		270
Thr Asp Phe Leu Asn Ser Gly Val Ala Pro Val Thr Phe Leu His Asp						
	275			280		285
Leu Thr Leu Phe Tyr Arg Asn Leu Leu Leu Thr Asn Ser Thr Thr Ser						
	290			295		300
Lys Phe Ser Ser Gln Tyr Lys Thr Glu Gln Leu Leu Glu Ile Ile Asp						
	305			310		315
Phe Leu Gly Glu Ser Ala Lys His Leu Gln Asn Thr Ile Phe Glu Gln						
	325			330		335
Thr Phe Leu Glu Thr Val Ile Ile His Ile Ile Arg Ile Tyr Gln Arg						
	340			345		350
Pro Val Leu Ser Glu Leu Ile Ser Ser Ile Lys Ser Arg Gln Phe Glu						

355 360 365
 Gly Leu Arg Asn Ile Lys Glu Pro Thr Leu Thr Gln Gln Val Ser Ala
 370 375 380
 Pro Gln Pro Gln Pro Thr Tyr Lys Glu Gln Ser Phe Leu Glu Lys Lys
 385 390 395 400
 Asn Gln Pro Ala Ala Glu Gly Lys Ile Ile Ser Val Glu Val Lys Ser
 405 410 415
 Ser Ala Ser Ile Lys Ser Ala Ala Val Asp Thr Leu Leu Gln Phe Ala
 420 425 430
 Val Val Glu Phe Ser Gly Ile Leu Arg Gln
 435 440

<210> 64
 <211> 1479
 <212> DNA
 <213> Chlamydia psittaci

<400> 64
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 tttatttcct tgtgtaagga acaagcttta gaacaggcag agctcataga taaaaagcgt 180
 tcgcggtggag aacctttagg aaaactcgca ggtgttcctg taggaattaa agataatatt 240
 cacgttacag gcctgaagac aacatgcgcc tctcgtgtgc tcgagaatta tcaaccaccg 300
 tttgatgcta ctgttgtaga aagaatcaaa aaagaagatg ggattatcct aggc aaactc 360
 aatatggatg agtttgcctt gggatcaaca acgctatatt ctgcttttca tcctaccac 420
 aaccctggg atttatctcg tgttcctgga ggttcttcag ggggatctgc ggccgcagtt 480
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 gcagcatttt gtggtgttgt aggttttaag ccttctacg gagccgtttc gcgttacggg 600
 cttgtagcct ttgcctcttc gctagatcaa atcggtcctt tagccaatac tgtagaagac 660
 gtcgccctaa tgatggatgt gttttctggt agagatccta aagatgcaac ctcaagagag 720
 tttttccgtg attcttttat gagcaagttg tctacggagg ttcctaaagt gattgggggtg 780
 cctagaacat ttttagaggg actccgtgat gatattaggg agaatttctt ctcttcatta 840
 gccatttttg aaggagaagg aaccatctt gtggatgtgg agttggatat tctcagccac 900
 gctgtatcta tatattacat ttttagcatct gctgaagctg ccacgaattt agcaaggttc 960
 gatgggggtgc gttatggata tcgttctcct caagcgcata ccatcagcca actctacgat 1020
 ctctcacgtg gagaaggatt tggcaaagag gtcatgcgca gaatcctctt agggaaactat 1080
 gtcttgtctg cggagagaca gaatgtttat tataagaaag ctacggcagt gcgtgctaag 1140
 attgtaaaag catttagaac tgcatttgaa aagtgtgaaa tcttagccat gcccgctctgt 1200
 tctagccccg cgtttgaaat aggagaaatt ctagatcctg tgactttata tctacaggat 1260
 atctatactg tagctatgaa ttttagcgtat cttcctgccca ttgccgtacc ctctggattt 1320
 tctaaggagg gcctgccctt aggcctacag attatcggac agcaaggaca agaccaacaa 1380
 gtgtgccaag tgggttacag tttccaagag catgcgcaaa ttaagcaatt gttttctaag 1440
 agatatgccca aaagtgttgt tctaggaggt caatcatga 1479

<210> 65
 <211> 492
 <212> PRT

<213> Chlamydia psittaci

<400> 65

Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr Leu Gly
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Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg Ile Glu
20 25 30
Glu Ala Glu Gly Gln Val Gly Ala Phe Ile Ser Leu Cys Lys Glu Gln
35 40 45
Ala Leu Glu Gln Ala Glu Leu Ile Asp Lys Lys Arg Ser Arg Gly Glu
50 55 60
Pro Leu Gly Lys Leu Ala Gly Val Pro Val Gly Ile Lys Asp Asn Ile
65 70 75 80
His Val Thr Gly Leu Lys Thr Thr Cys Ala Ser Arg Val Leu Glu Asn
85 90 95
Tyr Gln Pro Pro Phe Asp Ala Thr Val Val Glu Arg Ile Lys Lys Glu
100 105 110
Asp Gly Ile Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala Met Gly
115 120 125
Ser Thr Thr Leu Tyr Ser Ala Phe His Pro Thr His Asn Pro Trp Asp
130 135 140
Leu Ser Arg Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala Ala Val
145 150 155 160
Ser Ala Arg Phe Cys Pro Val Ala Leu Gly Ser Asp Thr Gly Gly Ser
165 170 175
Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys Pro Ser
180 185 190
Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Ala Ser Ser Leu
195 200 205
Asp Gln Ile Gly Pro Leu Ala Asn Thr Val Glu Asp Val Ala Leu Met
210 215 220
Met Asp Val Phe Ser Gly Arg Asp Pro Lys Asp Ala Thr Ser Arg Glu
225 230 235 240
Phe Phe Arg Asp Ser Phe Met Ser Lys Leu Ser Thr Glu Val Pro Lys
245 250 255
Val Ile Gly Val Pro Arg Thr Phe Leu Glu Gly Leu Arg Asp Asp Ile
260 265 270

Arg Glu Asn Phe Phe Ser Ser Leu Ala Ile Phe Glu Gly Glu Gly Thr
 275 280 285
 His Leu Val Asp Val Glu Leu Asp Ile Leu Ser His Ala Val Ser Ile
 290 295 300
 Tyr Tyr Ile Leu Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala Arg Phe
 305 310 315 320
 Asp Gly Val Arg Tyr Gly Tyr Arg Ser Pro Gln Ala His Thr Ile Ser
 325 330 335
 Gln Leu Tyr Asp Leu Ser Arg Gly Glu Gly Phe Gly Lys Glu Val Met
 340 345 350
 Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Ala Glu Arg Gln Asn
 355 360 365
 Val Tyr Tyr Lys Lys Ala Thr Ala Val Arg Ala Lys Ile Val Lys Ala
 370 375 380
 Phe Arg Thr Ala Phe Glu Lys Cys Glu Ile Leu Ala Met Pro Val Cys
 385 390 395 400
 Ser Ser Pro Ala Phe Glu Ile Gly Glu Ile Leu Asp Pro Val Thr Leu
 405 410 415
 Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr Leu Pro
 420 425 430
 Ala Ile Ala Val Pro Ser Gly Phe Ser Lys Glu Gly Leu Pro Leu Gly
 435 440 445
 Leu Gln Ile Ile Gly Gln Gln Gly Gln Asp Gln Gln Val Cys Gln Val
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 Gly Tyr Ser Phe Gln Glu His Ala Gln Ile Lys Gln Leu Phe Ser Lys
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 Arg Tyr Ala Lys Ser Val Val Leu Gly Gly Gln Ser
 485 490

<210> 66
 <211> 1962
 <212> DNA
 <213> Chlamydia psittaci

<400> 66
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 ctcgggcaac acgaattttg tgtccgtgat ccttttcgaa ggggcacctt ttttgctaac 180
 acgacagtac gtaagggaga caaagacctt cagcagcctt tcgctgtcga tattacaaaa 240
 tttcaccttt gtgcagatcc tttagctatt cccgaatgtc atcgtgatga gatcatccaa 300

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ctttgggtgga aaggatatgc aacaaagcat cgcttaccaa caaacgccct attttttatt 480
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tttaatcata ttctggaagg ggacgttgga gagagaaagc tgttgcggtc tcctttgaac 660
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gctcaatatc cgtttttcga tcccacaaat tataaggaat acttcaataa caaagagcgc 900
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cgttgtgcgg caccattttt ttctagggtt gctgaccgca cactcctcta tttagggatt 1860
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gaagaatgga atcgttctcc gaaacaaggg ggaacgaggt ga 1962

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<210> 67
 <211> 653
 <212> PRT
 <213> Chlamydia psittaci

<400> 67
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 35 40 45
 Arg Asp Pro Phe Arg Arg Gly Thr Phe Phe Ala Asn Thr Thr Val Arg
 50 55 60
 Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala Val Asp Ile Thr Lys
 65 70 75 80
 Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro Glu Cys His Arg Asp
 85 90 95

Glu	Ile	Ile	Gln	Gly	Ile	Leu	Gln	Phe	Ile	Glu	Gly	Gln	Thr	Tyr	Asp		
			100					105					110				
Asp	Leu	Ser	Leu	Lys	Leu	Asp	Lys	Lys	Ser	Arg	Tyr	Cys	Lys	Leu	Tyr		
		115					120					125					
Pro	Leu	Leu	Asp	Val	Ser	Val	His	Asp	Arg	Leu	Ser	Leu	Trp	Trp	Lys		
		130					135				140						
Gly	Tyr	Ala	Thr	Lys	His	Arg	Leu	Pro	Thr	Asn	Ala	Leu	Phe	Phe	Ile		
145					150					155					160		
Thr	Asp	Tyr	Gln	Arg	Ser	Tyr	Pro	Phe	Gly	Lys	Leu	Leu	Gly	Gln	Val		
			165						170					175			
Leu	His	Thr	Leu	Arg	Glu	Ile	Lys	Asp	Glu	Lys	Thr	Gly	Lys	Ala	Phe		
			180					185					190				
Pro	Thr	Gly	Gly	Met	Glu	Ala	Tyr	Phe	Asn	His	Ile	Leu	Glu	Gly	Asp		
		195					200					205					
Val	Gly	Glu	Arg	Lys	Leu	Leu	Arg	Ser	Pro	Leu	Asn	Arg	Leu	Asp	Thr		
	210					215					220						
Asn	Arg	Val	Ile	Lys	Leu	Pro	Lys	Asp	Gly	Ser	Asp	Ile	Tyr	Leu	Thr		
225					230					235					240		
Ile	Asn	Pro	Val	Ile	Gln	Thr	Ile	Ala	Glu	Glu	Glu	Leu	Glu	Arg	Gly		
			245						250					255			
Val	Leu	Glu	Ala	Lys	Ala	Gln	Gly	Gly	Arg	Leu	Ile	Leu	Met	Asn	Ser		
			260					265						270			
Gln	Thr	Gly	Glu	Ile	Leu	Ala	Leu	Ala	Gln	Tyr	Pro	Phe	Phe	Asp	Pro		
		275					280						285				
Thr	Asn	Tyr	Lys	Glu	Tyr	Phe	Asn	Asn	Lys	Glu	Arg	Ile	Glu	His	Thr		
		290				295					300						
Lys	Val	Ser	Phe	Val	Ser	Asp	Val	Phe	Glu	Pro	Gly	Ser	Ile	Met	Lys		
305					310					315				320			
Pro	Leu	Thr	Val	Ala	Ile	Ala	Leu	Gln	Ala	Asn	Glu	Glu	Ala	Ser	Leu		
			325						330					335			
Lys	Ser	Gln	Lys	Lys	Ile	Phe	Asp	Pro	Glu	Glu	Pro	Ile	Asp	Val	Thr		
		340						345					350				
Arg	Thr	Leu	Phe	Pro	Gly	Arg	Lys	Gly	Ser	Pro	Leu	Lys	Asp	Ile	Ser		
		355					360						365				
Arg	Asn	Ser	Gln	Leu	Asn	Met	Tyr	Met	Ala	Ile	Gln	Lys	Ser	Ser	Asn		
		370				375					380						

Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile Gln Ser Leu Gly Val
385 390 395 400

Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly Phe Gly Arg Lys Thr
405 410 415

Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu Val Pro Ser Pro His
420 425 430

Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser Leu Ser Thr Pro Tyr
435 440 445

Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr Gly Ile Gln Met Val
450 455 460

Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr Ala Val Arg Pro Thr
465 470 475 480

Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu Glu Tyr His Leu Pro
485 490 495

Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu Ile Thr Arg Glu Val
500 505 510

Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly Gly Ser Gly Phe Arg
515 520 525

Ala Ser Pro Lys His His Ser Ser Ala Gly Lys Thr Gly Thr Thr Glu
530 535 540

Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg His Ile Ala Ser Phe
545 550 555 560

Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly Asn Phe Pro Pro Leu
565 570 575

Val Met Leu Val Ser Ile Asp Asp Pro Glu Tyr Gly Leu Arg Ala Asp
580 585 590

Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala Ala Pro Ile Phe Ser
595 600 605

Arg Val Ala Asp Arg Thr Leu Leu Tyr Leu Gly Ile Leu Pro Asp Lys
610 615 620

Lys Leu Arg Asn Cys Asp Glu Glu Ala Ala Ala Leu Lys Arg Leu Tyr
625 630 635 640

Glu Glu Trp Asn Arg Ser Pro Lys Gln Gly Gly Thr Arg
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<210> 68
<211> 819

25103618.1

<212> DNA

<213> Chlamydia psittaci

<400> 68

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gagagtttac aggaagaggc taaagatcct ggaatcaagc tgaaaatact tccagtagat 180
gattatcgta ttcctaatacg tttgcttttg gataaacaag tagatgcaaa ttactttcaa 240
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cgtgctctac acttgttaga agagtgcgga ctcatgtgtt gcaaagggcc tgctaattta 480
aatatgacag ctaaagatgt ctgtgggaaa gaaaatagaa gtatcaacat attagaggtg 540
tcagctcctc ttcttgctcg atctcttcct gacgttgatg ctgctgtcat tcctggaaat 600
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<210> 69

<211> 272

<212> PRT

<213> Chlamydia psittaci

<400> 69

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      20              25              30

Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu Glu Ala Lys
      35              40              45

Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp Tyr Arg Ile
      50              55              60

Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn Tyr Phe Gln
      65              70              75              80

His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp Cys Lys Gly
      85              90              95

Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln Ala Ile Tyr
      100              105              110

Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln Lys Lys Leu
      115              120              125

Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg Ala Leu His
      130              135              140

Leu Leu Glu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro Ala Asn Leu
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145		150		155		160
Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg Ser Ile Asn						
	165			170		175
Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu Pro Asp Val						
	180		185			190
Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala Asn Leu Ser						
	195		200			205
Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val Ser Lys Tyr						
	210		215			220
Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser Pro Lys Met						
	225		230		235	240
Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln His Phe Phe						
	245		250			255
Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln Asp Asn Gly						
	260		265			270

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